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Final
Environmental Impact Report
and
Environmental Impact Statement

for the proposed

Mesquite Mine Expansion
Imperial County, California
SCH. No. 98121054 / BLM No. 40204

Prepared by the

County of Imperial
Planning & Building Department

and

Bureau of Land Management
California Desert District

February 2002

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Final
Environmental Impact Report/ Environmental Impact Statement (EIR/EIS)

for the Proposed

Mesquite Mine Expansion

State Clearinghouse No. 1998121054

BLM No. CA-40204

Applicant:
Newmont Mining Corporation
1700 Lincoln Street
Denver, Colorado 80203

Prepared By

U.S. Department of the Interior
Bureau of Land Management

County of Imperial
Planning and Building Department

Linda Hansen

Linda Hansen
District Manager
California Desert District

Jurg Heuberger
Planning Director
County of Imperial

PLANNING/BUILDING DEPARTMENT
IMPERIAL COUNTY

PLANNING / BUILDING INSPECTION / PLANNING COMMISSION / A.L.U.C.

JURG HEUBERGER, AICP,CEP
PLANNING/BUILDING DIRECTOR

March 1, 2002

SUBJECT: Final EIR/EIS for the Mesquite Mine Expansion/State Clearinghouse No. 1998121054

Dear Reader:

We are pleased to provide the Final Environmental Impact Report and Environmental Impact Statement (FEIR/EIS) for the proposed Mesquite Mine expansion project for your review. The proposed project would be located on public lands, state lands and private lands in eastern Imperial County, approximately 5 miles east of Glamis, north and west of SR-78. The proposed expansion comprises enlargement of several pits, waste rock piles, and heap leach pads, encompassing nearly 700 acres, of which 190 acres require new permits. The purpose of this document is to provide information to the public, as well as the cooperating and responsible agencies regarding the environmental consequences of expanding the existing open-pit, heap-leach, precious metal mine. Various technical reports have been prepared which have been used in the preparation of this Final EIR/EIS. The Final EIR/EIS, Draft EIR/EIS, and all of the referenced technical reports are available for public review at the Bureau of Land Management (BLM) El Centro Field office, 1661 South 4th Street, El Centro, California.

To facilitate review, this document has been prepared as an Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA) and implementing regulations and guidelines. The County of Imperial is the Lead Agency for the purpose of compliance with the requirements of CEQA for the proposed Mesquite Mine expansion.

This document has also been prepared as an Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act (NEPA) and implementing regulations. The Bureau of Land Management is the Lead Agency for the purpose of compliance with the regulations of NEPA for this proposed expansion.

The Final EIR/EIS will be used in the determination of approval or denial of the various discretionary actions by the BLM and the County of Imperial. A Record of Decision will be prepared by the BLM after the County has certified the EIR. The County will prepare the conditions for the Conditional Use Permit and the Reclamation Plan for the proposed mine expansion that are based on the environmental document.

A combined federal and state public review period of 60 days was established for the Draft EIR/EIS document that ended on October 30, 2000. For internet users, you may also review both the final and draft documents on the Internet at www.ca.blm.gov/elcentro/mesquite/.

In addition, a hearing will be held to receive public testimony March 27, 2002, by the County Planning Commission, in the second floor, Board Chambers at 940 Main Street, El Centro, California. Comments on the Final EIR should be provided to the County at that hearing. For information concerning the non-federal aspects of the EIR, please contact Richard Cabanilla at (760) 482-4313.

A 30-day waiting period on the FEIS follows publication of the Notice of Availability in the Federal Register. After the end of this period, BLM will issue its Record of Decision (ROD) containing the Agency's decision regarding the Proposed Action. Following publication of the ROD, there will be a 30-day period during which any appeals to the decision must be filed. For information concerning the federal aspects of the project, including the Record of Decision and comments on the Final EIS, contact Kevin Marty, BLM/El Centro Field Office at (760) 337-4422.

Linda Hansen

Linda Hansen
BLM District Manager
California Desert District
Riverside, California

Jurg Heuberger, AICP, CEP
Planning Director
Imperial County Planning/Bldg. Dept
El Centro, California

JH/RC/rs/F:Word/MesquiteFEIREIS.Richard

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IMPERIAL COUNTY CALIFORNIA

PLANNING/BUILDING DEPARTMENT
IMPERIAL COUNTY

PLANNING / BUILDING INSPECTION / PLANNING COMMISSION / A.L.U.C.

JURG HEUBERGER, AICP,CEP
PLANNING/BUILDING DIRECTOR

MARZO 1, 2002

TEMA: REPORTE FINAL DEL REPORTE Y DECLARACIÓN DE IMPACTO AMBIENTAL PARA LA AMPLIACIÓN DE LA MINA MESQUITE/AGENCIA DISTRIBUIDORA **NO. 1998121054**

ESTIMADO LECTOR:

NOS DA GUSTO DE PRESENTARLES PARA SU REPASO EL REPORTE FINAL DEL REPORTE Y DECLARACIÓN DE IMPACTO AMBIENTAL (RFRDIA) PARA LA AMPLIACIÓN PROPUESTA DE LA MINA MESQUITE. EL PROYECTO PROPUESTO ESTA UBICADO EN TERENO PÚBLICO, ESTATAL, Y PRIVADO AL ESTE DEL CONDADO DE IMPERIAL, APROXIMADAMENTE 5 MILLAS AL ESTE DE GLAMIS, NORTE Y OESTE DE SR-78. LA AMPLIACIÓN PROPUESTA AUMENTARAN LOS POZOS PARA EL DESPERDICIO DE PIEDRA, "HEAP LEACH PADS" ABARCA CERCA DE 700 ACRES, DE LA CUAL 190 ACRES REQUIEREN NUEVOS PERMISOS. EL PROPOSITO DE ESTE DOCUMENTO ES PARA PROPORCIÓNAR INFORMACIÓN AL PÚBLICO Y LAS AGENCIAS COOPERANDO Y REPONSABLES CON RESPECTO A LAS CONSEQUENCIAS DE AMPLIAR EL POZO ABIERTO EXISTENTE "HEAP LEACH PAD" Y LA MINA DE METAL PRECIOSO. SE HAN PREPARADO VARIOS REPORTES TÉCNICOS QUE SE HAN USADO EN LA PREPARACIÓN DE ESTE REPORTE FINAL EL (RFRDIA) Y TODOS LOS REPORTES TÉCNICOS DE REFERENCIA ESTAN DISPONIBLES PARA EL REPASO POR EL PÚBLICO EN LAS OFICINAS DEL DEPARTAMENTO DE MANEJAMIENTO DE TERENOS (BLM), 1661 SOUTH 4TH STREET, EL CENTRO, CA.

PARA FACILITAR EL REPASO, ESTE DOCUMENTO SE A PREPARADO COMO REPORTE DE IMPACTO AMBIENTAL CUMPLIENDO CON LA ACTA DE CALIDAD AMBIENTAL DE CALIFORNIA (CEQA) Y IMPLEMENTANDO REGLAMENTOS Y DIRECTIVAS. EL CONDADO DE IMPERIAL ES LA AGENCIA PRINCIPAL PARA QUE SE EJECUTEN LOS REQUISITOS DE (CEQA) PARA LA AMPLIACIÓN PROPUSTA DE LA MINA MESQUITE.

ESTE DOCUMENTO SE PREPARARO COMO DECLARACIÓN DE IMPACTO AMBIENTAL EN CONFORMIDAD CON LA PÓLIZA DE LA ACTA AMBIENTAL NATIONAL EN LA IMPLEMENTCIÓN DE SUS REGLAMENTOS. EL (BLM) ES LA AGENCIA PRINCIPAL ENCARGADA QUE SE EJECUTEN LOS REGLAMENTOS DE LA (PAAN) NEPA PARA LA EXPANSIÓN PROPUESTA.

EL (RFRDIA) SE USARA PARA DETERMINAR LA APROBACIÓN O RECHAZO DE VARIAS ACCIÓNES DISCRECIÓNALES POR (BLM) Y EL CONDADO DE IMPERIAL. ANOTACIÓN DE LA DECISIÓN SERA PREPARADO POR (BLM) DESPUÉS QUE EL CONDANDO HAYA CERTIFICADO EL REPORTE DE IMPACTO AMBIENTAL. EL CONDADO ESTARA EN CARGADO DE PREPARAR LAS CONDICIÓNES PARA EL PERMISO DE USO CONDICIÓNAL Y EL PLAN DE RECLAMACIÓN PARA LA AMPLIACIÓN PROPUESTA DE LA MINA QUE TIENE BASE EN EL DOCUMENTO AMBIENTAL.

LA COMBINACIÓN DEL PÚBLICO FEDERAL Y ESTATAL DE REPASE DE 60 DÍAS SE ESTABLECIO PARA EL DOCUMENTO REDACTADO DEL REPORTE Y DECLARACIÓN DE IMPACTO AMBIENTAL Y TUVO FIN EL 30 DE OCTUBRE, 2000. PARA LOS QUE USEN EL INTERNET, PUEDEN REPASAR EL REPORTE REDACTADO Y EL FINAL , AL www.ca.blm.gov/elcentro/mesquite/

SE LLEVARA ACABO EL 27 DE MARZO 2000 UNA AUDIENCIA PARA RECIBIR TESTIMONIOS DEL PÚBLICO PRESENTADO POR LA COMISIÓN DE PLANIFICACIÓN DEL CONDADO, EN EL SEGUNDO PISO, EN LA CAMARA DE DIRECTORS 940 MAIN STREET, EL CENTRO, CA. COMENTARIOS SOBRE EL REPORTE FINAL DEBEN DE PRESENTARLOS AL CONDADO EN ESA AUDIENCIA. PARA INFORMACIÓN SOBRE LOS ASPECTOS NO-FEDERAL DEL REPORTE DE IMPACTO AMBIENTAL, FAVOR DE COMUNCARSE CON RICHARD CABANILLA (760) 482-4313.

HABRA UN PERÍODO DE ESPERA DE 30 DÍAS EN LA DECLARACIÓN FINAL DE IMPACTO AMBIENTAL QUE SIGUE LA PUBLICACIÓN DE AVISO DE DISPONIBILIDAD EN EL REGISTRO FEDERAL. DESPUÉS DE ESTE PERÍODO, (BLM) PÚBLICARA SU DECISIÓN SOBRE LA ACCIÓN PROPUESTA. DESPUÉS DE LA PUBLICACIÓN HABRA UN PERÍODO DE 30 DÍAS Y DURANTE ESE TIEMPO CUALQUIER APELACIÓN A LA DECISIÓN DEBE SER ENTABLADA. PARA MAS INFORMACIÓN SOBRE LOS ASPECTOS FEDERALES DEL POYECTO, INCLUYIENDO LA DECISIÓN Y COMENTARIOS DE LA DECLARACIÓN FINAL DE IMPACTO AMBIENTAL. FAVOR DE COMUNICARSE CON KEVIN MARTY EN LAS OFICINAS DE EL CENTRO, AL (760) 337-4422.

Linda Hansen

LINDA HANSEN
BLM DISTRICT MANAGER
CALIFORNIA DESERT DISTRICT
RIVERSIDE, CALIFORNIA

JURG HEUBERGER, AICP,CEP
PLANNING DIRECTOR
IMPERIAL CO. PANNING/BLDG.DEPT.
EL CENTRO, CALIFONIA

JH/DW/RS/MESQUITESPANISH

NOTICE OF AVAILABILITY
OF MESQUITE MINE
FINAL EIR/EIS

NOTICE IS HEREBY GIVEN THAT THE FINAL ENVIRONMENTAL IMPACT REPORT AND ENVIRONMENTAL IMPACT STATEMENT (FEIR/EIS) FOR THE EXPANSION OF THE EXISTING MESQUITE MINE IS AVAILABLE FOR PUBLIC REVIEW AT THE BUREAU OF LAND MANAGEMENT (BLM) EL CENTRO FIELD OFFICE, 1661 SOUTH 4TH STREET, EL CENTRO, CALIFORNIA AND AT YOUR CLOSEST IMPERIAL COUNTY LIBRARY.

THE PURPOSE OF THE FINAL EIR/EIS IS TO PROVIDE INFORMATION TO THE PUBLIC ON THE ENVIRONMENTAL CONSEQUENCES OF EXPANDING THE EXISTING OPEN-PIT, HEAP-LEACH GOLD MINE. VARIOUS TECHNICAL REPORTS HAVE BEEN PREPARED WHICH HAVE BEEN USED TO PREPARE THE FEIR/EIS AND WHICH WILL BE USED IN THE DETERMINATION OF APPROVAL OR DENIAL OF THE VARIOUS DISCRETIONARY ACTIONS BY THE BLM AND THE COUNTY OF IMPERIAL.

A COMBINED FEDERAL AND STATE PUBLIC REVIEW PERIOD OF SIXTY (60) DAYS WAS ESTABLISHED FOR THE DRAFT EIR/EIS THAT ENDED ON OCTOBER 30, 2000. FOR INTERNET USERS, YOU MAY ALSO REVIEW BOTH THE FINAL AND DRAFT ENVIRONENTAL DOCUMENTS ON THE INTERNET AT www.ca.blm.gov/elcentro/mesquite/.

CEQA REVIEW: A PUBLIC HEARING WILL BE HELD BY THE IMPERIAL COUNTY PLANNING COMMISSION ON MARCH 27, 2002, IN THE SECOND FLOOR BOARD CHAMBERS, AT 940 MAIN STREET, EL CENTRO, CALIFORNIA. PUBLIC TESTIMONY ON THE FEIR WILL BE RECEIVED AT THAT HEARING. FOR INFORMATION REGARDING THE NON-FEDERAL ASPECTS OF THE EIR, PLEASE CONTACT RICHARD CABANILLA AT (760) 482-4313.

NEPA REVIEW: A NOTICE OF AVAILABILITY FOR THE FEIS WILL BE PUBLISHED IN THE FEDERAL REGISTER. FOLLOWING A 30-DAY WAITING AFTER PUBLICATION OF THE NOTICE OF AVAILABILITY, BLM WILL ISSUE ITS RECORD OF DECISION (ROD) CONTAINING THE AGENCY'S DECISION REGARDING THE PROPOSED ACTION. FOLLOWING PUBLICATION OF THE ROD, THERE WILL BE A 30-DAY PERIOD DURING WHICH ANY APPEALS TO THE DECISION MUST BE FILED. FOR INFORMATION REGARDING FEDERAL ASPECTS OF THE EIS, PLEASE CONTACT KEVIN MARTY OF BLM/EL CENTRO FIELD OFFICE AT (760) 337-4422.

JH/RC/rs/F:Word/NOTICEOFAVAILABILITYOFMESQUITEFEIREIS

ESTA DISPONIBLE EL REPORTE Y DECLARACIÓN FINAL DE IMPACTO AMBIENTAL DE LA MINA MESQUITE

SE DA AVISO QUE EL REPORTE FINAL DE IMPACT AMBIENTAL Y LA DECLARACIÓN DE IMPACTO AMBIENTAL PARA LA AMPLIACIÓN DE LA MINA MESQUITE EXISTENTE, ESTA DISPONIBLE PARA REPASO POR EL PÚBLICO EN LAS OFICINAS DEL DEPARTAMENTO DE MANEJAMIENTO DE TERENOS "BUREAU OF LAND MANAGEMENT" (BLM), 1661 SOUTH 14TH STREET, EL CENTRO, CA. Y EN TODAS LAS BIBLIOTECA DEL CONDADO DE IMPERIAL.

EL PROPOSITO DE ESTE REPORTE Y DECLARACION DE IMPACTO AMBIENTAL ES PARA PROPORCIÓNAR INFORMACIÓN AL PÚBLICO SOBRE LA CONSEQUENCIA AMBIENTAL A LA AMPLIACIÓN DEL POZO ABIERTO, "HEAP-LEACH " EN LA MINA DE ORO EXISTENTE. SE HAN PREPARADO VARIOS REPORTES TÉCNICOS QUE SE HAN USADOS PARA PREPARAR EL REPORTE Y DECLARACIÓN FINAL DE IMPACTO AMBIENTAL Y TENDRAN USO EN SU APROBACIÓN O RECHAZO DE VARIAS ACCIÓNES DISCRECIÓNALES POR (BLM) Y EL CONDADO DE IMPERIAL.

EL PERIODO PARA EL REPASO DEL DOCUMENTO REDACTADO POR EL PÚBLICO FEDERAL Y ESTATAL DEL REPORTE Y DECLARACIÓN DE IMPACTO AMBIENTAL DENTRO DE SESENTA (60) DIÁS SE TERMINO EL 30 DE OCTUBRE, 2000.

REPASO DEL CEQA: HABRA AUDIENCIA PÚBLICA EL 27 DE MARZO, 2002 PRESENTADO POR LA COMISIÓN DE PLANIFICACIÓN DEL CONDADO DE IMPERIAL EN EL SEGUNDO PISO EN LA CAMARA DE DIRECTORES, 940 MAIN STREET, EL CENTRO, CALIFORNIA. TESTIMONIOS DEL PÚBLICO SOBRE EL DOCUMENTO DE IMPACTO AMBIENTAL SE VAN A RECIBIR EN ESA AUDENCIA. PARA MAS INFORMACIÓN SOBRE LOS ASPECTOS NO-FEDERAL DEL REPORTE DE IMPACTO AMBIENTAL, FAVOR DE COMUNICARSE CON RICHARD CABANILLA AL (760) 482-4313.

REPASO DEL NEPA: AVISO DE ESTAR DISPONIBLE EL REPORTE FINAL DE IMPACTO AMBIENTAL SERA PÚBLICADO EN EL REGISTRO FEDERAL. SIGIENDO LA ESPERA DE 30 DÍAS DESPUÉS DE LA PUBLICACIÓN DE AVISO QUE ESTA DISPONIBLE, (BLM) ENTREGARA SU DECISION ACERCA LA ACCION PROPUESTA. DESPUES DE LA PUBLICACION HABRA UN PERÍODO DE 30 DÍAS DONDE SE TIENE QUE ENTABLAR CUALQUIER APELACIÓN. PARA INFORMACIÓN SOBRE ASPECTOS FEDERALES EN LA DECLARACIÓN DE IMPACTO AMBIENTAL, FAVOR DE COMUNICARSE CON KEVIN MARTY DE (BLM) AL NUMERO (760) 337-4422.

Table of Contents

Section **Page No.**

F Foreword F-1
Public Review Distribution List F-2
Library Listing F-4

1 Revised Executive Summary S-1

2 Comments on Draft EIR/EIS and Responses RTC-1

3 Errata Errata-1

Foreword

This Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) consists of a) this introduction; b) a list of persons or agencies who received copies of the Draft EIR/EIS; c) a revised Executive Summary, with changes shown in strikeout/underline format; d) public comments and responses to those comments; and e) an Errata section containing minor revisions and clarifications to the DEIR/EIS. The information is to be used in conjunction with information from the Draft EIR/EIS on the Mesquite Mine Expansion project, published August 8, 2000. That document was widely distributed at that time (more than 100 copies) and is not being republished as part of this Final EIR/EIS because the vast bulk of it remains valid considering the public comments received on the Draft EIR/EIS. Paper copies of the DEIR/EIS are available for review at Imperial County Planning and Building Department, 939 Main Street, El Centro, California, 92243; at the Bureau of Land Management, 1661 South 4th Street, El Centro, California, 92243; and at the public libraries listed on page E-4. In addition, the entire document can be found on the internet at www.ca.blm.gov/elcentro/mesquite/. The information in this Final EIR/EIS supplements and clarifies information in the DEIR/EIS. The documents are meant to be used together. In the event of any inconsistencies between the Draft and Final EIR/EIS, information in the Final EIR/EIS shall prevail. Major components of this FEIR/EIS are described below.

The Executive Summary incorporates changes and additions to project mitigation measures that arose from responding to public comments, from agency input, and the U.S. Fish and Wildlife Service's Biological Opinion.

The section "Comments on the Draft EIR/EIS and Responses" includes a listing of the names of persons, organizations and agencies that submitted written comments on the Draft EIR/EIS and identifies the specific response numbers assigned to each commentor. The comment letters and responses follow. The actual comment letters with response numbers inserted by the EIR/EIS preparers appear on the left-hand side of the page, and the responses appear on the right-hand side of the page.

The Errata section shows minor changes made to the Executive Summary and to selected pages of the Draft EIR/EIS, where text has either been added (indicated with underline) or deleted (indicated as struck out) for clarification purposes. Locations where changes have been made are shown with a vertical bar in the margin of the page. The changes that have been made are generally grouped into five categories:

1. Clarification of certain aspects of the project description.
2. Clarification of existing condition discussions to incorporate information that is readily available to the general public.
3. Revisions to the Mine Reclamation Plan requested by the California Department of Conservation, Office of Mine Reclamation.
4. Incorporation of the U.S. Supreme Court's, 2001, Solid Waste Agency of Northern Cook County (SWANCC) decision to limit the jurisdiction of the U.S. Army Corps of Engineers.
5. Additions to or revisions of biological resource mitigation measures based on the U.S. Fish and Wildlife Service Biological Opinion No 1-6-92-F-22R3, dated August 10, 2001, or other minor revisions to prior mitigation measures made for clarification.

Final EIR/EIS
Mesquite Mine Expansion
Public Review Distribution List

The following individuals, organizations and agencies received a copy of the Draft EIR/EIS for the proposed Mesquite Mine Expansion or a notice of its completion/availability and were invited to comment on its accuracy and sufficiency.

Governmental Agencies

U.S. Department of the Interior, Washington DC
U.S. Army Corps of Engineers
U.S. Fish & Wildlife Service, Carlsbad, CA
California State Lands Commission
California State Division of Oil, Gas and Geothermal Resources, El Centro
Bureau of Land Management (El Centro, Riverside, Sacramento)
U.S. Environmental Protection Agency (Washington D.C.)
U.S. Environmental Protection Agency (San Francisco)
U.S. Marine Corps Air Station/Yuma
U.S. Department of the Interior Minerals Management Service
Regional Water Quality Control Board (Region 7, Palm Desert)
California State Clearinghouse (distribution copies to applicable state agencies)
Imperial County Air Pollution Control District
Imperial County Planning & Building Department

Quechan Tribe

Preston Arrowweed, Quechan Tribe, Bard, CA
Lorey or Linda Cachora, Winterhaven, CA

Libraries

Bureau of Land Management Library, Denver, CO
San Diego State University Library, Calexico
Imperial County Library, El Centro
Brawley Public Library, Brawley
Indian Hill Library, Winterhaven
Yuma County Library
San Diego Public Library, San Diego
Holtville Public Library, Holtville
Palm Springs Library Center, Palm Springs
California State Office Library, Fed. Bldg., Sacramento

Individuals, Members of the General Public

Edie Harmon, Sierra Club, Ocotillo, CA
Stan Haye, Sierra Club, Independence, CA
Julie Mann, Brubaker-Mann, Barstow, CA
Frances Martin, North Hollywood, CA
Dr. Robert Fisher, Alpine, CA
Steven Hartman, Reseda, CA
Larry Bratton, El Centro CC, El Centro, CA
D. Deisley, Parsons Behle & Latimer, Salt Lake City, UT
J. von Werlhof, Imperial Valley College Desert Museum, Ocotillo, CA
Dave Paquin, Western Mining Council, Santee, CA
Jim Seay, Western Mining Council, Spring Valley, CA
Courtney Coyle, La Jolla, CA
Harriet Allen, Desert Protective Council, San Diego, CA
John Ochs, El Centro, CA
Gary Boyle, Winterhaven, CA
William Duffy, Cedar Pines Park, CA
Barry Carlson, Fort Collins, CO
Tim Boardman, El Centro, CA
Dan Purvance, Yuma, AZ
Tom Negleman, Yuma, AZ

Final EIR/EIS
Mesquite Mine Expansion
Library Listing

BLM Library-322A
Bldg. 50, Denver Federal Center
Denver, CO 80255

San Diego State Univ. Library
720 Heber Avenue
Calexico, CA 92231

Imperial County Library
539 State Street
El Centro, CA 92243

Holtville Public Library
101 East 6th Street
Holtville, CA 92250

Brawley Public Library
400 Main Street
Brawley, CA 92227

Palm Springs Library Center
300 South Sunrise Way
Palm Springs, CA 92262

San Diego Public Library
820 E Street
San Diego, CA 92101

Indian Hill Library
Quechan Tribe
Winterhaven, CA 92283

San Diego County Public Library
201 East Douglas
El Cajon, CA 92090-4519

Imperial Valley College Library
380 East Aten Road
Imperial, CA 92251

State Office Federal Building
Attn: Library (Public Room)
2800 Cottage Way, E-2841
Sacramento, CA 95825-1889

Yuma County Library
350 South 3rd Avenue
Yuma, AZ 85364

▪ Section 1 ▪

Revised Executive Summary

EXECUTIVE SUMMARY

Purpose of This Document

This ~~draft~~ Final Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) addresses the potential impacts and mitigation measures for construction and operation of the proposed Mesquite Mine Expansion. This document is being prepared as an EIR in compliance with the California Environmental Quality Act (Public Resources Code, Section 21000, et seq., herein, "CEQA"), the Guidelines for the Implementation of CEQA (CCR Section 15000, et seq., herein "State CEQA Guidelines"), and the Imperial County CEQA Guidelines, as amended. The County of Imperial is the lead agency for the purpose of compliance with the requirements of CEQA for the Proposed Action.

This document is also being prepared as an EIS in compliance with the National Environmental Policy Act (Public Law 91-90, 42 U.S.C. 4321 et seq., herein "NEPA") and the implementing Council on Environmental Quality (CEQ) Regulations (CFR Sec. 1500-1508). The Bureau of Land Management (BLM) National Environmental Policy Handbook (H-1790-1) was also consulted in preparing this document. The BLM is the lead agency for the purpose of compliance with the requirements of NEPA for the Proposed Action.

This EIR/EIS examines the potential environmental impacts ~~of excavating additional~~ expanding existing mine pits to obtain and process known gold ore in or adjacent to the existing Mine site.

Proposed Action

Newmont Gold Company (Newmont) proposes to expand mining and processing of ore and waste rock (overburden/interburden, O/I) ~~in and near~~within their existing Mesquite Mine. The Mine site is located at the southern end of the Chocolate Mountains, approximately 33 miles east of the City of Brawley, in eastern Imperial County. The general location of the Mine site is shown in Figure S-1.

The existing Mine site encompasses 5,200 acres, of which 3,655 acres have been disturbed by mining activities to date. Prior permits issued by BLM and the County of Imperial allow mining or related disturbance on 4,962 acres. Proposed new facilities include expansions of existing mine pits, diversion channels to keep surface waters from flowing into the pits, heap leach pad areas for removal of the gold from the ore, and overburden/interburden storage areas (OISAs) for storage of waste rock. Total acreage of these areas in the Proposed Action is 693 acres, of which only 190 acres represents new disturbance areas for which new permits will be required. The remaining 503 acres are areas that were previously permitted, or were previously disturbed by ancillary mining activities. New areas that would be disturbed by mining activity under the Proposed Action are shown in Figure S-2. Approximately 89 million tons of gold ore would be processed, and 242 million tons of overburden/ interburden would be moved. Approval of this expansion would allow the Mine to continue to operate ~~through 2006, instead of closing in 2001~~for six additional years.

Approximately 20% of the Proposed Action expansion areas are located within private land. Another 13% are within California State lands north of the existing Mine site. The remaining 67% of the proposed expansion area is within BLM-managed lands.

Alternatives

Alternatives to the Proposed Action have been identified in accordance with CEQA and NEPA guidelines. One other feasible alternative (Reduced Footprint Alternative) was addressed in this EIR/EIS. Other possible alternatives were identified, but were found to be infeasible and were eliminated from further consideration.

Reduced Footprint Alternative

An alternative that would disturb approximately 47 acres less of unpermitted, undisturbed land than the Proposed Action was also evaluated. This Alternative is designated the "Reduced Footprint" Alternative. It would forego development of the proposed Big Chief West OISA, and would reduce the sizes of the East Rainbow North OISA and the

East Rainbow South OISA by a total of 45 acres. This alternative would reduce the area of new land to be disturbed by storing approximately 90 million tons of waste rock (of the projected 240 million tons to be generated in proposed excavations) in the existing mine pits. See Figure S-3.

No Project / No Action Alternative

Under this alternative, expansion of the proposed facilities would not occur, but mining and processing of ore would continue for a short time. Mining would continue in the Vista and Big Chief pits, overburden / interburden would be placed to their permitted limits on the existing OISAs, and leaching of gold from the ore would continue at the permitted heap leach pads.

Impacts That Cannot Be Mitigated

Cumulative impacts to visual resources are anticipated in conjunction with the planned and approved but unbuilt Mesquite Landfill adjacent to the Mine. Cumulative PM_{10} (fugitive dust) air quality impacts are anticipated because of the area's nonattainment status for that pollutant. No other unmitigated direct, indirect, or cumulative impact of the Proposed Action has been identified.

Summary of Project Impacts

The environmental consequences of the Proposed Action and its alternatives are evaluated in Chapter 4 of this EIR/EIS for each of the 12 elements of the human environment identified through the scoping process. No significant direct impacts to the following critical elements of the human environment would occur for any of the project alternatives.

- Air Quality (mitigated)
- Areas of Critical Environmental Concern
- Cultural Resources
- Farm Lands
- Floodplains
- Native American Religious Concerns
- Threatened or Endangered Species (mitigated)
- Hazardous or Solid Wastes
- Water Quality
- Wetlands/Riparian Zones
- Wild and Scenic Rivers
- Wilderness

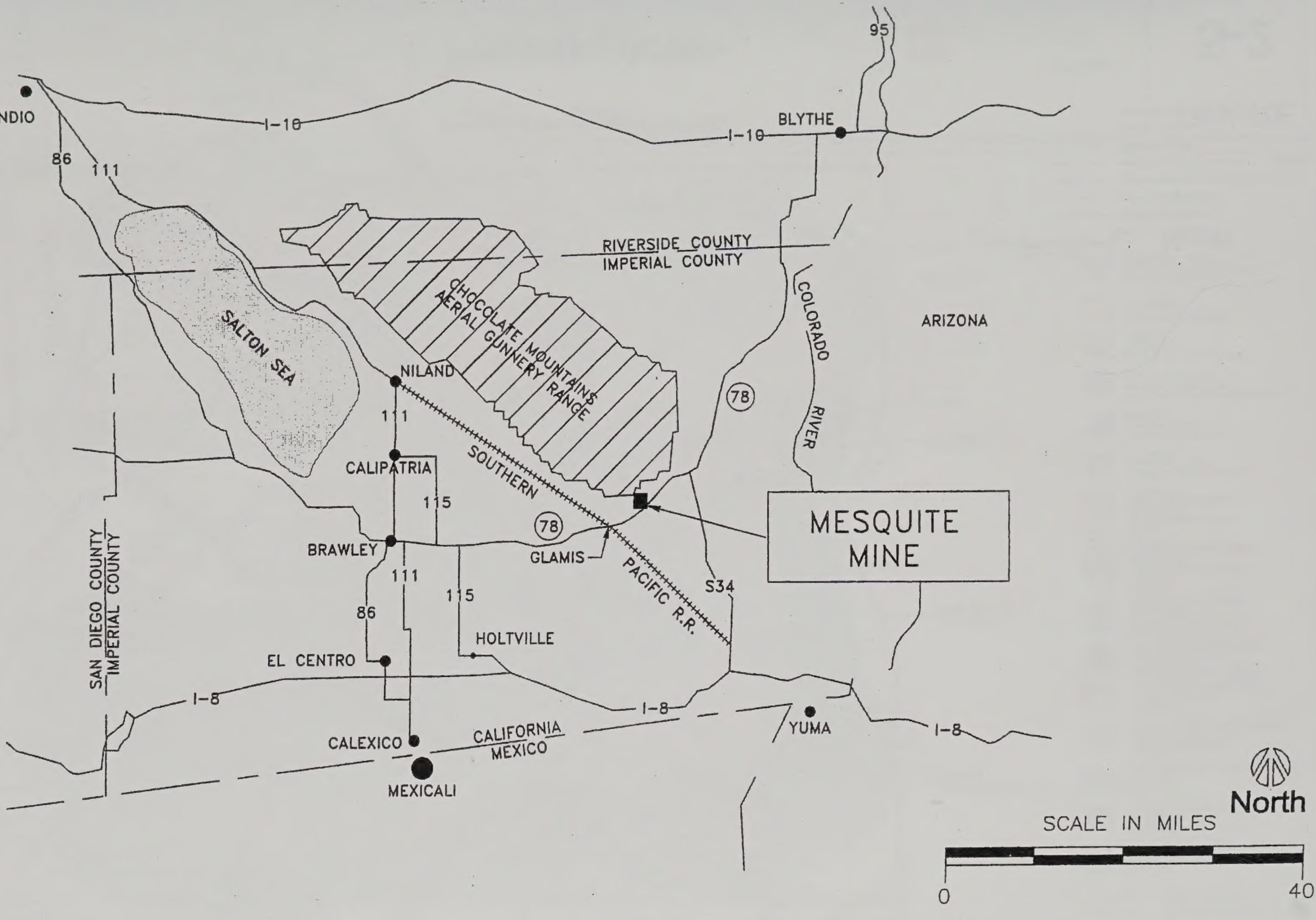
Chapter 4 includes a discussion of mitigation measures that would eliminate impacts or would reduce them to a level less than significant.

Table S-1 summarizes the environmental effects of the Proposed Action and its alternatives. The table addresses the potential impacts that are expected to occur, their significance, recommended mitigation measures, and resulting level of significance after implementation of the mitigation measures.

Other Federal, State, and Local Actions

Numerous other governmental actions, decisions and approvals will have to occur before expansion of the Mine can proceed. These actions include:

- Endangered Species Act, Sec.7 Consultation between BLM and U.S. Fish & Wildlife Service (completed)
- U.S. Fish & Wildlife Service to review the Biological Evaluation, and issue Biological Opinion (completed)
- National Historic Preservation Act, Section 106 Consultation between the BLM and the California Office of Historic Preservation (completed)
- BLM to approve Mine Plan of Operations
- ~~U.S. Army Corps of Engineers to approve an individual permit to dredge or fill waters of the United States~~
- BLM to publish a Record of Decision on the EIS
- California Dept. of Game and Fish to review the Biological Evaluation, issue a CESA Incidental Take Permit, and a Streambed Alteration Agreement (Section 1603)
- California Regional Water Quality Control Board to decide whether to amend Waste Discharge Requirements for discharge of waste to land~~; also to approve a Certificate of Compliance with Section 401 of the Clean Water Act~~
- California State Lands Commission to review/ approve a Mineral Extraction lease
- Imperial County Board of Supervisors to certify this EIR, and approve a Mitigation Monitoring and Reporting Program; also approve a Conditional Use Permit amendment/Reclamation Plan for Mine expansion, approve a Conditional Use Permit amendment for continued use of water from the Mesquite Mine well field
- Modification to existing Authority to Construct and Permit to Operate from the Imperial County Air Pollution Control District



SOURCE: Newmont Mining Corporation, 1999.

07/07/00

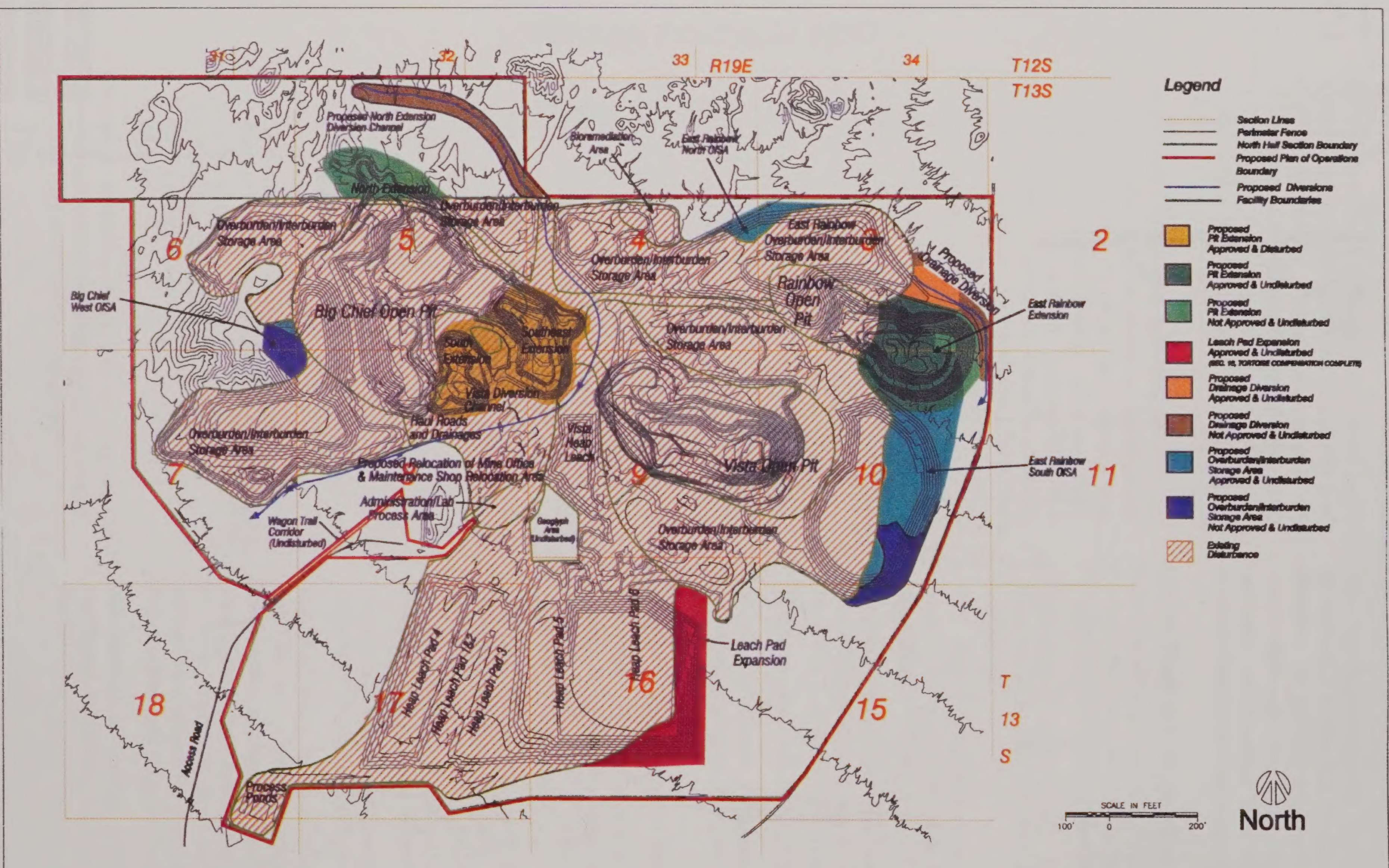
BRG CONSULTING, INC.

Mesquite Mine Expansion EIR/EIS

Regional Location Map

FIGURE

S1


31
32
33
R19E
34
T12S
T13S
Proposed North Extension Diversion Channel
Bioremediation Area
East Rainbow North OISA
North Extension
Overburden/Interburden Storage Area
Overburden/Interburden Storage Area
6
5
4
3
2
Overburden/Interburden Storage Area
East Rainbow Overburden/Interburden Storage Area
Rainbow Open Pit
Proposed Drainage Diversion
Big Chief West OISA
Big Chief Open Pit
Southeast Extension
South Extension
Overburden/Interburden Storage Area
East Rainbow Extension
Vista Diversion Channel
Haul Roads and Drainages
Overburden/Interburden Storage Area
Vista Heap Leach
Proposed Relocation of Mine Offices & Maintenance Shop Relocation Area
7
8
9
Vista Open Pit
10
East Rainbow South OISA
11
Administration/Lab Process Area
Wagon Trail Corridor (Undisturbed)
Geoglyph Area (Undisturbed)
Overburden/Interburden Storage Area
Heap Leach Pad 6
Leach Pad Expansion
18
17
Heap Leach Pad 4
Heap Leach Pad 1&2
Heap Leach Pad 3
Heap Leach Pad 5
16
15
T 13 S
Access Road
Process Ponds
SCALE IN FEET
100'
0
200'
North
Legend
Section Lines
Perimeter Fence
North Half Section Boundary
Proposed Plan of Operations Boundary
Proposed Diversions
Facility Boundaries
Proposed Pit Extension Approved & Disturbed
Proposed Pit Extension Approved & Undisturbed
Proposed Pit Extension Not Approved & Undisturbed
Leach Pad Expansion Approved & Undisturbed (SEC. 15, TORTOISE COMPENSATION COMPLETE)
Proposed Drainage Diversion Approved & Undisturbed
Proposed Drainage Diversion Not Approved & Undisturbed
Proposed Overburden/Interburden Storage Area Approved & Undisturbed
Proposed Overburden/Interburden Storage Area Not Approved & Undisturbed
Existing Disturbance

SOURCE: Newmont Mining Corporation, 2000

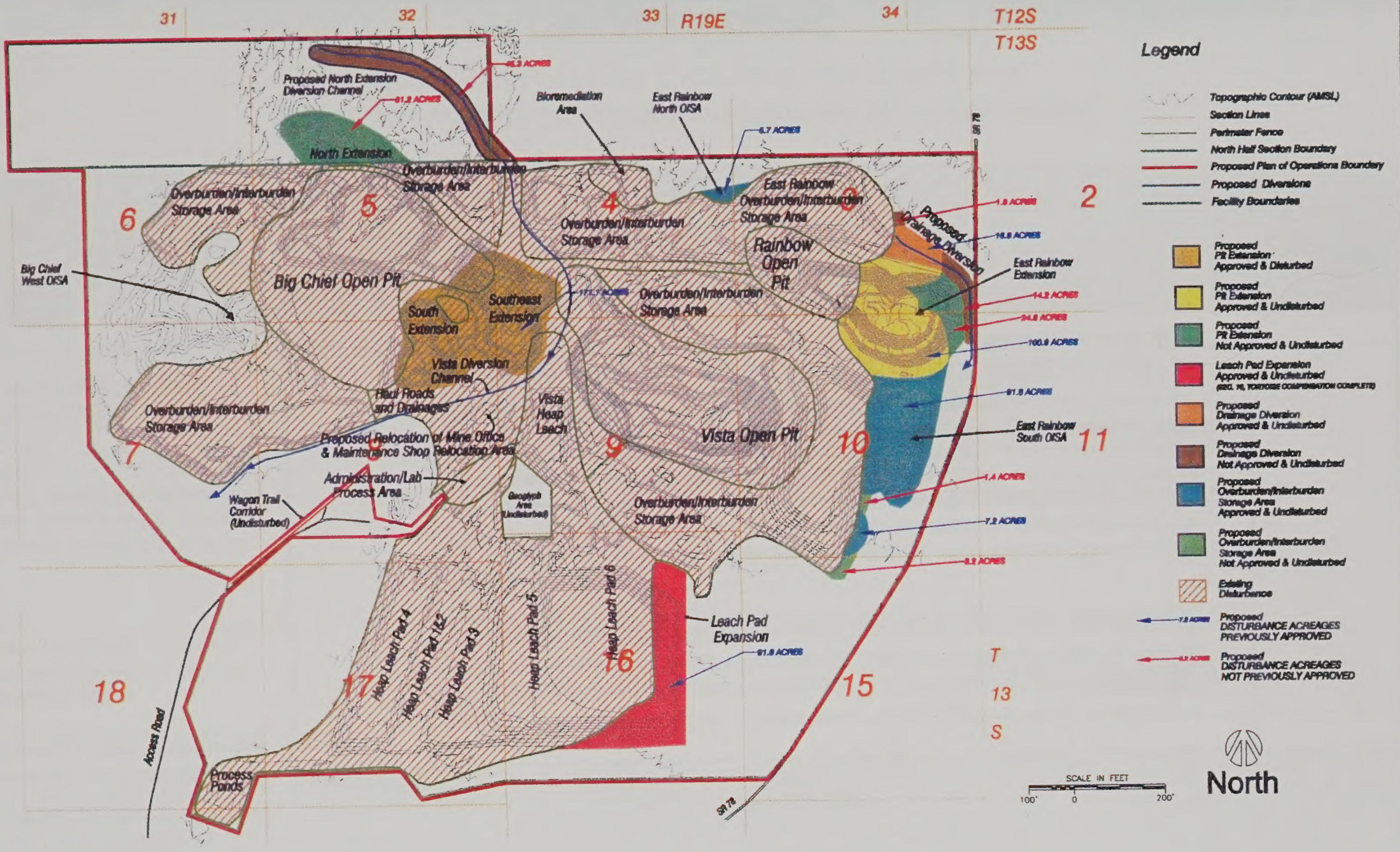
7/7/00

Mesquite Mine Expansion EIR/EIS

Proposed Action

FIGURE

S-2


31
32
33
R19E
34
T12S
T13S
Proposed North Extension Diversion Channel
46.3 ACRES
61.2 ACRES
North Extension
Bioremediation Area
East Rainbow North OISA
6.7 ACRES
Overburden/Interburden Storage Area
East Rainbow Overburden/Interburden Storage Area
Rainbow Open Pit
Proposed Drainage Diversion
1.8 ACRES
16.8 ACRES
East Rainbow Extension
14.2 ACRES
24.8 ACRES
100.9 ACRES
61.8 ACRES
East Rainbow South OISA
1.4 ACRES
7.2 ACRES
8.2 ACRES
Big Chief West OISA
Big Chief Open Pit
South Extension
Southeast Extension
171.1 ACRES
Vista Diversion Channel
Haul Roads and Drainages
Proposed Relocation of Mine Office & Maintenance Shop Relocation Area
Administration/Lab Process Area
Wagon Trail Corridor (Undisturbed)
Geoglyph Area (Undisturbed)
Vista Heap Leach
Vista Open Pit
Leach Pad Expansion
91.8 ACRES
Heap Leach Pad 4
Heap Leach Pad 1&2
Heap Leach Pad 3
Heap Leach Pad 5
Heap Leach Pad 6
Process Ponds
Access Road
SR 78
2
3
4
5
6
7
8
9
10
11
15
16
17
18
T 13 S
Legend
Topographic Contour (AMSL)
Section Lines
Perimeter Fence
North Half Section Boundary
Proposed Plan of Operations Boundary
Proposed Diversions
Facility Boundaries
Proposed Pit Extension Approved & Disturbed
Proposed Pit Extension Approved & Undisturbed
Proposed Pit Extension Not Approved & Undisturbed
Leach Pad Expansion Approved & Undisturbed (SEC. 16, TORTOISE COMPENSATION COMPLETE)
Proposed Drainage Diversion Approved & Undisturbed
Proposed Drainage Diversion Not Approved & Undisturbed
Proposed Overburden/Interburden Storage Area Approved & Undisturbed
Proposed Overburden/Interburden Storage Area Not Approved & Undisturbed
Existing Disturbance
7.2 ACRES
Proposed DISTURBANCE ACREAGES PREVIOUSLY APPROVED
8.2 ACRES
Proposed DISTURBANCE ACREAGES NOT PREVIOUSLY APPROVED
SCALE IN FEET
100'
0
200'
North

SOURCE: Newmont Mining Corporation, 1999

7/7/00

Mesquite Mine Expansion EIR/EIS

Reduced Footprint Alternative

FIGURE

S-3

Table S-1

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Geology, Soils and Mineral Resources			
Proposed Action Possible erosion on OISA and leach pad slopes.	S	Best Management Practices (BMP's) for control of erosion ~~would~~ shall be implemented, as part of the Stormwater Pollution Prevention Plan required by General Stormwater Permit. Applicant shall implement a stormwater quality monitoring program and post-construction BMPs.	NS
Possible erosion in new Diversion Channels and in existing desert washes downstream from them.	S	Same as above. Also… Applicant to ensure that peak flow conditions in off-site washes are substantially the same as what would have occurred without the presence of the Mine. Applicant shall incorporate stable channel configurations and/or protection such as riprap to limit erosion of diversion ditches not associated with the expansion. The Applicant shall submit engineered drawings for Caltrans review and approval of proposed extensions of existing erosion protection features for 60 feet on both sides of SR-78 at Swale D.	NS NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Geology, Soils and Mineral Resources (continued)			
Potential damage to Mine facilities from earthquakes.	S	The Applicant shall utilize and implement pit slope toe buttressing consistent with the engineered design reviewed and approved by the California Department of Conservation, Office of Mine Reclamation (OMR). ~~Applicant shall design pit wall configurations in conformance with SMARA requirements. Pit slope parameters will be determined and reviewed by California registered civil engineers, with appropriate safety factors based on their professional experience. Pit design information will be submitted for review to the California Dept. of Conservation, Office of Mine Reclamation. Final decisions about pit design parameters will be made by the County of Imperial, delegated this authority under SMARA.~~ Benches shall be provided in pit walls at regular intervals to catch minor sliding/raveling. Applicant shall construct leach pads and OISA slopes with benches for stability. ~~Applicant and their engineers will consider to ensure pit slope stability include 1) unloading the top of the slope; 2) providing buttresses for steep slopes; 3) backfilling waste rock at the base of excavated slopes.~~	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Geology, Soils and Mineral Resources (continued)			
Potential damage to Mine facilities from earthquakes. (Continued)		The heap leach pad expansion shall not be located on a Holocene Fault. The Applicant shall design and construct project structures (e.g., relocated mine buildings) that are subject to the Uniform Building Code according to Seismic Zone 4 standards.	
Reduced Footprint Alternative Impacts similar to those of the Proposed Action.	S	Same as identified for the Proposed Action.	NS
No Project/ No Action Altern. Possible erosion impacts similar to those of the Proposed Action	S	Best Management Practices (BMPs) for control of erosion are being implemented as part of the existing Stormwater Pollution Prevention Plan for the NPDES permit	NS
Water Resources			
Proposed Action It is possible that significant erosion and resulting sedimentation could occur in the diversion channels and downstream.	S	The Applicant shall incorporate the following water protection features into the proposed construction, operation and closure of the expansion, as required by CCR Title 27 mining regulations administered by the Colorado River RWQCB. • Design and construct diversion and drainage facilities to accommodate precipitation conditions associated with the 100-year precipitation event. • Ensure that peak flow conditions in off-site washes are substantially the same as what would have occurred without the presence of the Mine. • Design and construct the East Rainbow and Vista diversion channels to discharge flows at approximately the same locations and flow rates that occur presently or which historically occurred prior to development of the Mine diversion system. • Repair abnormal erosion and take steps to prevent further occurrence in a timely manner The Applicant shall submit engineered drawings for Caltrans review and approval of proposed extensions of existing erosion protection features for 60 feet on both sides of SR-78 at "Swale D."	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Water Resources (continued)			
Proposed Action (continued) Fluids utilized in the heap leach process could potentially escape and pollute ground water.	S	• The heap leach pad expansion shall be constructed with a low permeability liner system to contain process fluids. • The heap leach pad expansion shall be operated with monitoring systems to allow detection of potential process fluid leakage in the subsurface. • The leach pad expansion shall be closed in a manner such that, after closure, it no longer poses a threat to water quality.	NS
~~Proposed Action may impact up to 25 acres of Waters of the U.S., under Army Corps of Engineers (ACOE) jurisdiction. Actual number of acres affected will be determined by ACOE.~~	~~S~~	• ~~Applicant shall mitigate impacts to Waters of the U.S. as determined by the ACOE within the concurrent Section 404 process. It is anticipated that such mitigation will involve preservation of an appropriate acreage of Waters within the proposed compensation area for desert tortoise habitat.~~	NS
Fuels and other bulk liquids used on site could potentially spill and result in pollution of surface or ground waters.	S	1) Applicant ~~will~~ shall store fuels and other bulk liquids with the potential to contaminate ground water in aboveground containers within containment areas. • Containment structures shall be designed by a Registered Civil Engineer, and construction shall be supervised and certified by a Registered Civil Engineer or a Certified Engineering Geologist.	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Water Resources (continued)			
Proposed Action (continued) Erosion from new OISAs could potentially result in downstream sedimentation.	S	• Applicant shall construct and operate the proposed expansion facilities in accordance with the California General Permit for Stormwater (NPDES). These requirements include implementing a Stormwater Pollution Prevention Program incorporating BMPs. • The OISAs shall be closed in a manner that will minimize erosion and the threat of water quality degradation from sedimentation.	NS
Evapoconcentration of minerals and elements in the pit lake waters could potentially pollute groundwater resources. However, the analysis shows that the pits will act as "sinks", pulling in water from adjacent strata, and evaporating it. The waters will not flow the other way.	NS	None required.	NS
Reduced Footprint Alternative Impacts similar to those of the Proposed Action.	S	Same as identified for the Proposed Action~~, except that fewer acres of Waters of the U.S. would need to be preserved under this alternative~~.	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Signifi- cance Without Mitigation	Mitigation Measures	Level of Signifi- cance With Mitigation
Water Resources (continued)			
No Project/No Action Alternative Impacts would be similar to those of the Proposed Action, except that no additional waters of the U.S. would be affected, and there would be no expansion of OISAs or heap leach pads beyond the levels and locations already allowed by permit. In addition, the facility after closure would not require the 1,500 acre-feet per year of water that would be needed for the Proposed Action.	S	Best Management Practices (BMPs) for control of erosion are being implemented as part of the existing Stormwater Pollution Prevention Plan for the NPDES permit. In addition, measures to preclude water pollution from the heap leach pads and OISAs are already in place, as a result of prior operating permits.	NS
Biological Resources			
Proposed Action **Vegetative Habitat** The proposed expansion would result in a direct loss of approximately 380 acres of	S	1. At the end of the project, disturbed areas, including new access roads, ~~should~~ shall be re-contoured and re-seeded with an appropriate mixture of native plant species according to the Reclamation Plan. All new mitigation measures included in the revised Reclamation Plan (October 2001) shall be implemented. 2. All ~~desert tortoise-proof~~ fences shall be removed also according to the Reclamation Plan except for those required by mitigation measure B-51.	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) creosote/ desert pavement habitat, approximately 67 acres of microphyll woodland habitat, and approximately 45 acres of upland succulent habitat. Another 15 acres of microphyll woodland would be cut off from upstream water sources south of the proposed North Diversion Channel. Blue palo verde (*Cercidium floridum*) and desert ironwood (*Olneya tesota*), associated with these 3 plant communities would also be impacted. Suitable habitat for ribbed cryptantha and winged cryptantha was observed throughout the Proposed Action area, though	S	~~2~~3. Access ~~should~~ shall be confined to approved routes to reduce impacts brought about by road proliferation. ~~3~~4. All bladed vegetation and excavated materials ~~should~~ shall be stockpiled in such a manner that they do not obstruct the natural flow of water down wash systems. ~~4~~5. Avoid destruction of vegetation, particularly cacti and patches of herbaceous plants, whenever possible. ~~5~~6. Scarify all compacted soil (except desert pavement) upon completion of mining activities. This may be done by using rippers, discs, rakes or other appropriate equipment. ~~6~~7. Storage of equipment, supply material, ores or any residue of the mining operation shall be accomplished in a manner that minimizes surface disturbance. ~~7~~8. ~~Approximately 1,440 acres of similar but higher-quality habitat would be preserved as part of compensation for the loss of desert tortoise habitat.~~Pits shall be back filled to the maximum extent practicable.	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) no individuals for these species were observed. Of these three habitat communities, microphyll woodland is considered the most sensitive because it provides potential habitat for several sensitive bird, reptile and mammal species.	S	10. Qualified biologists shall conduct a reconnaissance for potential sensitive species in areas proposed for disturbance in the wet season prior to that disturbance. 11. Mine pit walls within twenty feet above and below the projected long-term water levels will be designed to be as steep as possible (at least 1:1), to minimize the development of vegetation that could serve as dietary pathways for ingestion of harmful compounds by birds and animals, while complying with all applicable slope stability requirements.	NS
Of the approximately 82 acres of proposed impact to microphyll woodland, approximately 23 acres (heap leach pad expansion, Section 16) are already permitted and compensated for in accordance with previous environmental mitigation. Therefore, the Proposed Action will result in a net impact of approximately 59 acres of microphyll woodland (44 acres direct impact, 15 acres indirect).	S	12. Impacts to microphyll woodland habitat shall be mitigated at a 3:1 ratio by a) preservation of off-site habitat and b) by restoration of 3.8 miles of drainage diversions to microphyll woodland.	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **CDFG Jurisdictional Streambed** Microphyll woodland and desert washes are considered to be indicators of CDFG jurisdictional streambeds. Approximately 25.24 acres of such streambeds are found within the unpermitted areas of the Proposed Action, while an additional 39.87 acres are found in areas previously permitted for Mine expansion.	S	**CDFG Jurisdictional Streambed** 9. Impacts to CDFG jurisdictional streambed shall be mitigated at a 3:1 ratio, in accordance with permits issued by CDFG under Sections 1600 *et seq* of the Fish and Game Code. It is anticipated that mitigation will involve preservation of an appropriate acreage of CDFG jurisdictional lands within the ~~proposed 1,440 acres of~~ compensation lands for desert tortoise habitat.	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Endangered Species** **Desert Tortoise** Approximately 693 acres of desert tortoise habitat (BLM Category II and III) will be disturbed as a result of the proposed expansion. The loss of this 693 acres of potential habitat from the proposed mine expansion would represent a significant direct impact on the desert tortoise. However, approximately 272 acres are currently compensated for under past Plans of Operation, or were disturbed prior to the listing of the desert tortoise. All of the acres in Section 16 are permitted and have been compensated for under Biological Opinion (1-6-92-F-22). Therefore, no additional impacts are anticipated due to development of Sec. 16 lands.	S	The following reasonable and prudent measures are proposed as necessary and appropriate to minimize the impacts of incidental take of desert tortoise: 13. On-site biological supervision/ monitoring, along with clearance surveys and relocation efforts, shall be utilized to reduce the likelihood of harm/harassment to the desert tortoise. 14. Employee education programs, designated work areas, defined operational procedures, ~~reclamation efforts, and a microphyll woodlands assessment shall minimize the impact of mine-related operations on both the desert tortoise and the species' associated habitat~~shall be continued. 15. Reclamation of the mine site shall occur to minimize the impact of mine-related operations on the tortoise and tortoise habitat. To be exempt from the prohibitions of Section 9 of the Act, compliance must meet with the following terms and conditions. These implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary. 16. The applicant shall acquire 1309.5 acres of tortoise habitat within the Chuckwalla Bench ACEC to compensate for the loss of 291 acres of Category II habitat, and 216 acres of tortoise habitat to compensate for the loss of 216 acres of Category III habitat, and transfer these lands to BLM ownership to be protected as desert tortoise habitat. To compensate for the loss of 82 acres of microphyll woodland associated with the Mesquite Mine Expansion, 246 acres of land transferred would be microphyll	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Endangered Species** **Desert Tortoise (continued)**		woodland. In lieu of acquiring compensation acreage, the project proponent may supply BLM funds adequate to acquire such acreage or make permanent improvements to desert tortoise habitat, as approved by the Service. ____~~Compensation for loss of habitat is necessary according to BLM requirements. Current requirements are based on a formula presented in Recommendations for Management of the Desert Tortoise in the California Desert (BLM, 1988), Instruction Memorandum CDD93-13, Instruction Memorandum CDD95-14, and Compensation for the Desert Tortoise, Desert Tortoise Management Oversight Group, 1999. The project proponent shall choose one of the following: 1) Acquire compensation lands. They will be located in the Chuckwalla Bench Area of Critical Environmental Concern (ACEC). The deed for these lands is to be delivered to the BLM. Or the project proponent shall 2) provide adequate funds (the amount to be determined by the BLM) to the BLM for the acquisition of compensation lands. These lands will be located in the Chuckwalla Bench~~	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)** A total of 421.6 acres of impacts to tortoise have not been compensated, and would be new impacts associated with implementation of the Proposed Action.		~~ACEC. The last choice is for the project proponent to 3) make permanent improvements to desert tortoise habitat. This must be upon agreement with the Fish and Wildlife Service (the Service), CDFG and BLM. For the Proposed Action the compensation ratio in Category III habitat is 1:1 (130 acres in Category III habitat; 130 acres to be compensated); in Category II habitat the ratio is 4.5:1 (291 acres in Category II habitat; 1,310 to be compensated) for a total of 1,440 acres to be compensated. For the reduced footprint Alternative the compensation ratio in Category III habitat is 1:1(109 acres in Category III habitat; 109 acres to be compensated); in Category II habitat the ratio is 4.5:1 (246 acres in Category II habitat; 1,107 to be compensated) for a total of 1,216 acres to be compensated. The mine operator must work closely with the BLM in selecting the lands most benefiting the conservation and recovery efforts. Compensation requirements shall be agreed upon prior to permitting.~~ ~~2~~17. The Mine operator shall designate a field contact representative (FCR) who ~~will~~ shall be 1) responsible for overseeing compliance with protective measures for the desert tortoise, 2) involved in compliance coordination with the BLM, and 3) authorized to halt any mine-related actions that may be in violation of the biological opinion. The FCR (a contract biologist, company environmental coordinator, project manager, or other appropriate mine employee) shall retain a copy of the tortoise stipulations and be available on-site for all project activities. ~~3~~18. Only the authorized biologist and other persons confirmed by the Fish and Wildlife Service, under the auspices of the current biological opinion, shall be permitted to handle/relocate desert tortoises. The Service and BLM must approve the wildlife biologist who must demonstrate experience in the proper handling of desert tortoises	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		and locating tortoises and their sign. The BLM shall submit the names and credentials of individuals to the Service for review and approval at least 15 days prior to the onset of any mine-related operations. No excavation/ surface disturbing activities ~~will~~ shall commence until the authorized biologist has been selected. A biological monitor or the authorized biologist shall be present during all surveying efforts (excluding archaeological work), any power line construction, overbuilding activities, pipeline installation, water well excavation, or road realignments. The qualified biologist must have education/ training/ experience in conducting surveys, monitoring/supervising project operations, and implementing tortoise avoidance and minimization measures. ~~4~~19. ~~T~~During exploration activities, the biological monitor/ authorized biologist shall regularly inspect (a minimum of three times per day) any test holes or associated open trenches, if any. Entrapped tortoises/wildlife ~~will~~ shall be permitted to move from harm's way or carefully removed from the excavation site by the authorized biologist. A final inspection of trenches and holes shall be conducted by the biological monitor/ authorized biologist just prior to backfilling. All test holes shall be immediately capped/sealed upon completion of drilling. ~~5~~20. Desert tortoises may only be handled by the authorized biologist or FCR in the case of an emergency, and only when necessary. Any desert tortoise relocated or otherwise removed from areas with mine-related construction/ excavation shall be handled in accordance with the procedures described in *Guidelines for Handling Desert Tortoises During Construction Projects* (DTC 1994, revised 1999). All tortoises shall be translocated to ~~an identified tortoise relocation site~~sites identified and approved by the Service and BLM prior to clearance and relocation.	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		~~6~~21. BLM, in consultation with the appropriate regulatory agencies and the proponent, ~~will~~ shall identify several areas for the relocation of tortoises within the vicinity of the Mesquite Mine. These relocation areas ~~will~~ shall be at least 0.5-1.0 mile apart in suitable microphyll woodland habitat and a reasonable distance from paved roads and extensively used dirt roads. In order to reduce potential competition, no more than two tortoises ~~should~~ shall be relocated in each area. ~~7~~22. The authorized biologist shall maintain a complete record of every desert tortoise encountered and moved from harm's way during all mine-related efforts. At a minimum, the information shall include: location (written description and map) of the tortoise finding, date and time of observation, and details of the relocation site; tortoise life history information (i.e., weight, length, width, height, and sex); general condition and health, including any apparent injuries/state of healing and occurrence of bladder voiding upon handling; and diagnostic markings (e.g., identification number or previously marked lateral scute). ~~8~~23. Desert tortoises removed/relocated from the mine site or ancillary areas shall be marked for future identification. An identification number (using the acrylic paint/epoxy technique) ~~will~~ shall be affixed to the fourth costal scute (Service 1990b), and a 35 mm photo-graph (slide) of the carapace, plastron, and fourth left costal scute shall be obtained. No notching or replacement of fluids by injection (i.e., syringe) shall be authorized. Any water basins, bowls, or other containers provided to a tortoise for rehydration shall be promptly removed from the field following determination by the authorized biologist that adequate fluid replacement has occurred.	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Signifi-cance Without Mitigation	Mitigation Measures	Level of Signifi-cance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		~~9~~24. Upon locating a dead or injured desert tortoise, the Permittee shall notify BLM ~~will be notified~~ within 24 hours. The BLM ~~must~~ shall then notify the ~~appropriate field office of the~~ Service's Carlsbad Field Office (760) 431-9440 by telephone within three days of the finding. Written notification to BLM and USFWS ~~must be~~shall occur within 15 days of the finding. The information provided must include the date and time of the finding or the incident (if known); location of the carcass; a photograph; cause of death, if known; and other pertinent information. Desert tortoise remains shall be collected, frozen as soon as possible, and delivered to the BLM. Injured animals shall be transported to a qualified veterinarian for treatment at the expense of the project proponent. If an injured animal recovers, the Service ~~should~~ shall be contacted for final disposition of the animal. ~~10~~25. The authorized biologist shall submit a summary report to the Service and BLM upon completion of the clearance surveys, relocation/handling efforts, and any injuries/ deaths encountered during mine-related activities. Additionally, the report ~~will~~ shall include an evaluation of the effectiveness of the avoidance/ minimization measures and possible recommendations to further reduce the direct/indirect effects of the mining operations on desert tortoise and its associated habitat. ~~11~~26. A raven monitoring program shall be conducted over the project's lifetime to determine whether mining actions promote an increase in the relative abundance of ravens, and, correspondingly, a higher predation rate on desert tortoise. Five monitoring stations ~~will~~ shall be established within and around the proposed site (i.e., the center and each corner) and visited on a monthly basis. The program shall commence at least 1-year prior to any project-related surface disturbance. During a standard observation period (15 min.), the biological monitor, authorized biologist, FCR, or other Service and BLM approved individual shall record raven numbers and behavior and inspect any nest sites	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		for desert tortoise remains, along with documenting all carcasses found (i.e., number, size, relative time of death, and distance from nest). A report ~~will~~ shall be submitted to the Service and BLM before July 1st of each year, summarizing the monitoring results. A comprehensive raven management program shall be developed and instituted in the event that significant increases in raven numbers are observed over time. ~~12~~27. A desert tortoise education program shall be presented to all mine employees conducting activities at the project site, process area, or ancillary facilities. Personnel participation in the program shall precede any initiation of project actions. Following the onset of mining, new employees must formally complete the training prior to working on-site. The BLM-approved tortoise program ~~will~~ shall contain, at a minimum, the following topics: (1) desert tortoise distribution/ occurrence; (2) general behavior and ecology; (3) species' sensitivity to human activities; (4) legal protection; (5) penalties for violation of State or Federal laws; (6) reporting requirements; and (7) project protective measures, including necessary caution/ awareness during commutes. ~~13~~28. A specially designed tortoise proof fence shall be constructed around ~~proposed disturbance areas~~the entire mine site. The fence ~~will~~ shall consist of a non-breachable barrier and support structures. Galvanized hardware cloth of 0.635 cm (0.25 in) diameter shall be attached along the base of the fence and buried a mini-mum of 30 cm (12 in) underground with an above-ground extension of at least 46 cm (18 in). If burial is not feasible, the bottom one-half of the fence shall be positioned flat on the ground, opposite the project/ process area, and appropriately weighted (e.g., large rocks) or secured. ~~Overall, the smaller 0.635 cm (0.25 in) mesh size was selected to prevent tortoise entry into the mine site and minimize the likelihood of incidental reptile mortality. Fence ensnared lizards could attract ravens and potentially/artificially increase predation upon the resident tortoises.~~	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		~~14~~29. After fence installation, the authorized biologist shall conduct a thorough survey for desert tortoises within the site. All desert tortoises found shall be removed. If the removal is during the season of above ground activity, the desert tortoises shall be placed beside a burrow of appropriate size. If the removal is not in the season of above ground activity, the tortoise shall be moved (dug out of burrow if necessary) on a seasonably warm day and placed at the mouth of a burrow of appropriate size. If the desert tortoise does not enter the burrow, an artificial burrow may be ~~needed~~necessary. ~~The authorized biologist shall be allowed some judgement and discretion to ensure that survival of the desert tortoise is likely.~~ All tortoises shall be relocated to identified/approved areas.	
		~~15~~30. No later than 90 days after completion of fence construction, the FCR and the authorized biologist shall prepare a report for the BLM. The report shall document the effectiveness and practicality of the mitigation measures. Additionally, it shall include the number of desert tortoises excavated from burrows, the number of desert tortoises moved from the site, the relocation site(s), the number of desert tortoises killed or injured, and the specific information for each desert tortoise listed above. The report ~~shall~~ may make recommendations for modifying the stipulations to enhance desert tortoise protection or to make it more workable for the operator.	
		~~16~~31. The fence shall be ~~regularly~~ monitored monthly and corrective action promptly taken to maintain the overall integrity of the tortoise barrier. Following storms, the fence's structure shall be assessed and immediately repaired at all damaged locations.	
		~~17~~32. In washes and other areas susceptible to flash flooding, "break-away" tortoise fabric may be installed. These segments shall be loosely tied to the fence on higher ground, permitting the fabric to "break-away" in the event of substantial surface flows.	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		~~18~~33. Small mesh nets, a solid high density polyethylene/polypropylene cover, or other appropriate screening shall be placed over the leach pad's adjoining ponds (i.e., pregnant and barren solution ponds) to prevent tortoise access and possible injury/mortality. The coverings will be regularly inspected and maintained by the Applicant for the duration of the project.	
		~~19~~34. During the development of all ancillary facilities/features (i.e., power lines, pipeline, water wells, or road realignments) all vehicles and equipment shall be limited to established roads, designated/marked spur roads, trails, and approved rights-of-way. To the maximum extent practicable, material stockpiling, equipment storage, and vehicle parking shall occur in areas of prior disturbance or generate not greater than 0.4 ha (1 acre) of new surface impacts. Additionally, to minimize surface disturbance to the surrounding habitat, the ~~boundaries of the work area~~authorized biologist shall ~~be~~ conspicuously stake~~d~~, flag~~ged~~ or mark~~ed~~ all work area boundaries. ~~For all project-related actions, the crushing/removal of perennial vegetation shall be avoided to the maximum extent practicable.~~	
		~~20~~35. ~~Any~~ All vehicles using the entry road shall not exceed a speed of 30 mph. ~~p~~ Project-related vehicles or equipment operating on the mine's ancillary/non-haul roads shall not exceed a speed limit of 25 mph. The project proponent will be responsible for enforcing this speed requirement on its employees, contractors, and agents. Additionally, cross-country or off-road travel ~~will~~ shall not be permitted at any time, except under life threatening/ emergency situations.	
		~~21~~36. Employees shall inspect beneath parked vehicles and equipment prior to traveling. If a desert tortoise is encountered, no action shall be taken until either the animal has safely and voluntarily moved away from the parked vehicle or the authorized biologist has relocated the tortoise out of ~~harm's way~~potential danger.	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		~~22. If it is necessary for a worker to park temporarily outside of a cleared enclosure, the worker shall inspect for desert tortoises under the vehicle prior to moving it. If a desert tortoise is present, the worker shall carefully move the vehicle only when necessary or shall wait for the desert tortoise to move out from under the vehicle.~~ ~~23~~37. Desert tortoise notification and speed limit signs shall be posted and maintained within the project's boundaries. Employee parking areas ~~will~~ shall have conspicuous signs alerting personnel to the presence of tortoises. Speed limits shall be posted within the mine site and along all regularly traveled ancillary/non-haul roads. ~~24~~38. The Service and BLM~~, in consultation with the Service,~~ shall pre-approve the type(s) of chemical dust suppressant(s) used on haul/maintenance/access roads prior to their application. ~~25~~39. All trash and food items shall be promptly stored in raven and coyote proof containers and regularly conveyed from the mine site. Project structures/design ~~will~~ shall minimize the potential for raven nest or perch sites and no mining features (e.g., other buildings, power/ water line enhancements, etc.) beyond the scope of the currently proposed action shall be approved or authorized. ~~26. Structures that may function as raven nesting or perching sites are not authorized except as specifically stated in the plan of operation notice. The project proponent shall describe anticipated structures to the BLM during initial project review.~~ ~~27~~40. No pets shall be permitted at the project site, process area or ancillary facilities, at any time. Furthermore, firearms shall be strictly prohibited, except for security personnel.	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		~~28~~41. Road kill found along the mine's primary access way shall be promptly removed/buried to reduce the attraction of ravens and other potential tortoise predators to the area. In addition, no feeding of coyotes, kit foxes, or ravens shall be allowed. ~~29~~42. Upon completion of the Mesquite Mine Project, all mine-related materials and vehicles/equipment shall be promptly removed from the site. Machinery and personnel involved with the mine's subsequent reclamation shall only be permitted in the project area during the course of ~~revegetation~~ reclamation efforts. Once reclamation measures have been implemented, no associated equipment and supplies will be allowed to remain on-site. ~~to relocated the tortoise out of harm's way.~~ 43. In addition to the measures proposed, the California Department of Fish and Game requires that a management rate of $200/acre and a $95/acre enhancement fee, be provided to the Department for management of acquired tortoise lands. The acreage subject to the fee shall be determined as part of the 2080.1 consistency determination. 44. Tortoise exclusion fencing or chain link fencing shall be installed around the entire area undergoing mining activities, except in areas where existing chain link fencing has been modified with a berm at the base of the fence as described in Opinion 1-6-92-F-22. Currently, the area to the north of the mine site does not have tortoise exclusion fencing or modified chain link fencing. This area shall be fenced to prevent the continued ingress of desert tortoises to areas where they may be harmed. 45. Inactive burrows that will not undergo damage or destruction from mine expansion shall be flagged and avoided. Following completion of the individual support facilities, all materials utilized to mark or identify the tortoise burrows shall be promptly removed.	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued)			
Desert Tortoise (continued)		46. Compensation for disturbance to desert tortoise habitat is identified as part of the proposed action. This term and condition refines the proposal to acquire desert tortoise habitat as compensation for losses to desert tortoise habitat. Lands acquired by BLM to offset impacts associated with the proposed project shall be secured and deeded to the BLM prior to phased disturbance associated with the expansion.	
		47. BLM must receive 50% of the necessary compensation acreage (800 acres), or funds sufficient to acquire such acreage within 6 months of expansion notification and prior to surface disturbance associated with the expansion. At least 50% of the microphyll woodland compensation lands (123 acres) (or appropriate funds to allow BLM acquisition of lands), or lands comprising a 3:1 ratio to the microphyll woodland that will be disturbed in the first phase, whichever is greater, must be received by BLM as part of this first installment of compensation land. Subsequent land acquisition to compensate for the loss of desert tortoise habitat associated with expansion must occur prior to surface disturbance associated with each expansion phase.	
		48. Compensation lands shall be identified on BLM maps available to El Centro Field Office staff, and protected in perpetuity for the benefit of the desert tortoise. Appropriated lands shall not be exchanged, sold, or otherwise disposed of. BLM shall retain land acquired as compensation for the purpose of desert tortoise conservation.	
		49. The BLM shall develop, and the Service approve, a raven monitoring plan that can be implemented to detect changes in raven abundance associated with mining activities.	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		50. The mine site restoration effort shall be directed towards the re-establishment of desert tortoise habitat and conducted under a Desert Tortoise Habitat Restoration Plan that is approved by the BLM and the Service. 51. Pits shall either be backfilled and slope steepness reduced to a grade negotiable for tortoise, or tortoise barrier fencing or modified chain link fencing shall be installed around the perimeter of all pits after mining is complete. BLM shall assure that fences installed are maintained in perpetuity. Backfilling or fencing is necessary to minimize ongoing incidental take that could otherwise occur if tortoises fall into steep-sided pits left open after mining. BLM shall take the lead in negotiating implementation of this mitigation measure with all affected organizations and agencies. 52. Success criteria for future Wash/Microphyll Woodland, Upland Succulent, and Creosote Scrub, areas shall include density, cover, and species composition criteria, that reflect conditions suitable for desert tortoise habituation and typical of the general area . 53. As part of the Desert Tortoise Habitat Res-toration Plan, revegetated areas shall be monitored under an approved monitoring plan, and maintained clear of weeds until success criteria are met. The monitoring and revegetation requirements shall remain in place including all contingency measures to insure eventual success, until the success criteria are achieved.	

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Desert Tortoise (continued)**		54. Disturbance to desert tortoise habitat within the mine site shall be minimized to the maximum extent possible by implementing all feasible means of using currently disturbed areas rather than expanding the footprints of OISAs, heap leach pads, and ancillary facilities. New OISAs, heap leach pads and ancillary facilities shall be kept within existing disturbed areas (as shown in EIR/EIS Figure 2.1-1) or within areas approved for facility expansion under this FEIR/EIS, such as the Big Chief West OISA, the Section 16 leach pad expansion area, and the East Rainbow North OISA.	
Bat Species Suitable roosting habitat was not present within any of the proposed expansion areas, however all of the areas are considered to be suitable as foraging habitat. Three known/ potential roosting sites were identified in the region.	NS	Reclamation of microphyll woodland done concurrently with mine development may reduce impacts, if any, to California leaf-nosed bat, Greater Western Mastiff bat, small-footed Myotis, Desert pallid bat, spotted bat, and Townsend's Big-eared bat.	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Western Chuckwalla** Approximately 25 acres of habitat for the western chuckwalla were observed within proposed expansion areas. No individuals were observed, but based on past observations of chuckwalla in the vicinity, it is possible that a population exists within the Proposed Action area. A loss of chuckwalla habitat may occur.	NS	**Western Chuckwalla** ~~1~~55. Avoid chuckwalla habitat whenever possible. ~~2~~56. Ensure that chuckwalla habitat that is avoided ~~will~~ shall have a corridor of ~~an~~ undisturbed lands connecting to habitat offsite. ~~These avoidance and connection areas will be identified on a map prior to permitting.~~	NS
Mule Deer Approximately 82 acres (67 acres directly, 15 acres indirectly) of Microphyll Woodland will be disturbed as a result of the proposed expansion. A loss of mule deer habitat may occur including movement corridors, forage and cover.	NS	**Mule Deer** ~~1~~57. A mule deer fence, whose design is approved by the game branch of CDFG, ~~should~~ shall be installed along the entire perimeter of the mine property. Fences will be routinely checked for breaks. ~~2~~58. ~~Attractive~~ Process water ~~will~~ shall be fenced, contained, or otherwise made unavailable to mule deer. These deterrents will be routinely checked to assure mule deer cannot access these water sources. Death of a mule deer on the mine will be reported to CDFG within one week of occurrence.	NS

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Table S-1

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) Impacts to Fairy duster *(Calliandra eriophylla)*. Fewer than 20 individuals were found in the proposed East Rainbow North OISA. In addition, 5-10 individuals were observed within the proposed East Rainbow Extension, and fewer than 23 individuals were observed within the proposed Leach Expansion area.	S	59. Microcatchments shall be installed in the reclaimed areas to provide areas of moisture enhancement and to aid in seed germination. 60. Seeds shall only be collected from plants on and in proximity to the Mesquite Mine property to enhance the potential for successful re-vegetation. These seeds shall be used in future reseeding of reclaimed areas as well as in any nursery programs conducted on site for later transplant. 61. Mature Fairy duster plants within the proposed expansion areas shall be salvaged and transplanted into reclaimed areas. 62. Cuttings or seeds from local Fairy duster plants shall be utilized to augment population numbers. 63. Any Fairy duster plants that are lost as a result of the Mine expansion shall be mitigated on a 1:1 basis, either through planting of new plants in appropriate areas as described above (B-62), or through preservation of fairy duster plants located within the planned compensation lands.	NS
Impacts to Slender-lobed 4 O'clock flower (*Mirabilis tenuiloba*). No individuals were observed, but suitable habitat does exist in the East Rainbow South OISA (10 acres).	S	64. Microcatchments shall be installed in any areas that will benefit from moisture enhancement and continued input of wind-dispersed seed. 65. Disturbed areas along roads and facility areas shall be scarified to provide more conducive surfaces and substrate conditions for natural plant establishment.	NS

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Signifi-cance Without Mitigation	Mitigation Measures	Level of Signifi-cance With Mitigation
Biological Resources (continued)			
Proposed Action (continued)			
Impacts to Ribbed cryptantha (*Cryptantha holoptera*). No individuals were observed, but suitable habitat was observed.	S	66. Microcatchments shall be installed in any areas that will benefit from moisture enhancement and continued input of wind-dispersed seed. 67. Disturbed areas along roads and facility areas shall be scarified to provide more conducive surfaces and substrate conditions for natural plant establishment.	NS
Impacts to Winged cryptantha (*Cryptantha costata*). No individuals were observed, but suitable habitat was observed.	S	68. Microcatchments shall be installed in any areas that will benefit from moisture enhancement and continued input of wind-dispersed seed. 69. Disturbed areas along roads and facility areas shall be scarified to provide more conducive surfaces and substrate conditions for natural plant establishment.	NS

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Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Proposed Action (continued) **Ecological Risk Assessment** There is a potential that the pit lake water could harm the health of animals attracted to it. The study found that salinity will limit the use of the water for drinking. However, some chemicals of concern (boron, silver, fluoride, selenium) would concentrate in any plants that would grow adjacent to the lakes, and thus be available for transfer through the dietary pathway of the food chain.	S	**Ecological Risk Assessment** Mine pit walls within twenty feet above and below the projected long-term water levels will be designed to be as steep as possible (at least 1:1), to minimize the development of vegetation that could serve as dietary pathways for ingestion of harmful compounds by birds and animals, while complying with all applicable slope stability requirements.~~Impacts from the dietary pathway will be minimized through design and construction of the pit walls. By making the pit walls as steep as practicable at the levels above and below the projected steady state pit lake water level, vegetative growth adjacent to the lakes will be minimized, thus minimizing harm to birds and animals through ingestion of harmful com-pounds. This will also minimize habitat creation near the lakes.~~	NS
Reduced Footprint Alternative Impacts to biological resources from this Alternative would be similar, but slightly less, than those of the Proposed Action. For example, this Alternative	S	The reduced footprint alternative identified in the EIS, if adopted, would require less compensation acreage because less surface disturbance would occur as a result of the action. The applicant would acquire 1,206 acres of tortoise habitat to compensate for the loss of 268 acres of Category II habitat, and 188 acres of tortoise habitat to compensate for the loss of 188 acres of Category III habitat. Within the 1,394 acres of compensation acreage, 243 acres of microphyll woodland would be required.~~The same as the Proposed Action, except that compensation for destruction of desert tortoise habitat would require transfer of approximately 1,211 acres, 167 acres less than for the Proposed Action. Also the area of microphyll woodland and Waters of the U.S. affected are estimated to be slightly less for this Alternative, 58 acres and 22 acres, respectively. The actual acreage of Waters of the U.S. will be determined by the ACOE, in the Section 404 process.~~	NS

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Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Biological Resources (continued)			
Reduced Footprint Alternative (continued) would require compensation for impacts to 355.4 acres of desert tortoise habitat, a decrease of approximately 66 acres from the Proposed Action. It would also impact 1 acre less of microphyll woodland, and may impact 3 fewer acres of ~~Waters of the U.S~~desert washes. All other impacts of this Alternative are very similar to those of the Proposed Action.		If the final action taken on the proposed expansion is the reduced footprint alternative, the required compensation acreage will change accordingly. The reduced footprint alternative would result in surface disturbance to 268 acres of Category II habitat and 188 acres of Category III habitat, including 81 acres of microphyll woodland. BLM must receive 50% of the necessary compensation acreage (697 acres), or funds sufficient to acquire such acreage, within 6 months of expansion notification and prior to disturbance associated with expansion. At least 50% of the microphyll woodland compensation lands (121 acres) (or appropriate funds to allow BLM acquisition of lands), or lands comprising a 3:1 ratio to the microphyll woodland that will be disturbed in the first phase, whichever is greater, must be received by BLM as part of this first installment of compensation land. Subsequent land acquisition to compensate for the loss of desert tortoise habitat associated with expansion must occur prior to surface disturbance associated with each expansion phase. Appropriate funds to allow BLM acquisition of compensation lands may be transferred in lieu of land.	
No Project/ No Action Alternative This Alternative would avoid the direct loss of up to 380 acres of creosote/ desert pavement habitat, 67 acres of microphyll woodland habitat, and 45 acres of upland habitat. It would avoid direct impacts to desert tortoise and fairy duster species, and the loss of habitat to several other species. In addition, it would avoid impacts to any areas under ~~ACOE or~~ CDFG jurisdiction.	NS	None required.	NS

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Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Cultural Resources			
Proposed Action No cultural resources were identified that met requirements for eligibility to the National Register of Historic Places	NS	None required.	NS
Reduced Footprint Alternative Same as Proposed Action.	NS	None required.	NS
No Project/ No Action Altern. No additional area would be disturbed outside areas that are currently permitted.	NS	None required.	NS
Paleontological Resources			
Proposed Action No paleontological resources exist at the site.	NS	None required.	NS
Reduced Footprint Alternative Same as Proposed Action.	NS	None required.	NS

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Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Paleontological Resources (continued)			
No Project/ No Action Altern. No additional area would be disturbed outside areas that are currently permitted.	NS	None required.	NS
Transportation			
Proposed Action No more than 20 or 30 additional employees would be required for the expansion. This would cause a negligible increase in traffic on SR 78 above traffic levels that occurred in 2000..	NS	None required.	NS
Reduced Footprint Alternative Same as Proposed Action.	NS	None required.	NS
No Project/ No Action Alternative The mine would be closed and the 164 existing employees would be laid off. This would decrease traffic on SR 78 below the levels that occurred in 2000.	B	None required.	B

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Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Noise			
Proposed Action Persons in the Mine vicinity cold be affected by Mine noise levels.	NS	The Applicant shall comply with the Imperial County General Plan, which establishes noise emissions controls for the entire County.	NS
Mine employees and visitors could possibly be affected by onsite noise levels.	NS	The Applicant shall comply with the applicable Mine Safety and Health Administration (MSHA) regulations set forth in 30 CFR 56 and California Occupational Safety and Health Administration (Cal OSHA) regulations set forth in 8 CCR 5095 *et seq.* shall be implemented by the Applicant.~~Mine operation must comply with federal and state laws governing worker safety, including prevention of noise impacts to employees and visitors. These safety procedures are in effect now, and would continue with any Mine expansion.~~	NS
Visitors to the interpretive trail could hear noise from mine operations.	NS	None required. Noise heard by visitors would not change substantially from existing conditions.	NS
Reduced Footprint Alternative Same as Proposed Action.	NS	None required.	NS
No Project/ No Action Altern. The mine would be closed. Following closure and reclamation procedures, the Mine site would be quiet.	B	None required.	B

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Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Air Quality			
Proposed Action Potential carcinogenic & non-carcinogenic health effects.	NS	None required.	NS
Proposed Action Potential impacts to air quality from fugitive PM10 emissions from mine pit excavation, haul roads, heap leach pads, and OISAs.	S	PM10 air pollution control measures at the Mine ~~will~~ shall continue to use the following : • Wet drilling • Use of an enclosed baghouse for loading and unloading of lime • Enhanced watering of unpaved roads and activity areas (digging, handling and plac-ing of overburden~~t~~/interburden and ore) • Monitoring of PM10 concentrations at four perimeter stations on a 24-hour basis, to assure that no excessive fugitive PM10 travels off-site. • Use of chemical dust suppressants, or other techniques with equivalent effect.	CS
Potential impacts to air quality from emissions of mobile sources including loaders, haul trucks, cranes, etc.	NS	The Mine ~~will~~ shall continue a vigorous mobile equipment maintenance program to assure that the equipment is in good working condition, thus minimizing emissions, including the use of low sulfur diesel fuel..	NS
Potential emissions from onsite point sources, including fuel tanks, an electric smelting furnace, carbon kiln, a boiler, and an electrowinning cell.	NS	No additional mitigation measures are required.	NS
Reduced Footprint Alternative Same as Proposed Action.	S, NS	Same as identified above for the Proposed Action.	NS

S = Significant
NS = Not Significant

SU = Significant Unavoidable
CS = Cumulatively Significant

B = Beneficial
* = Cannot be determined at this time

Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Air Quality (continued)			
No Project/ No Action Altern. Until closure, emissions for this alternative would be similar to those of the Proposed Action.	S, NS	Same as identified above for the Proposed Action	CS
Termination of mining operations in 2001 instead of 2006 would marginally contribute to attainment of air quality standards.	B	None required.	B
Land Use			
Proposed Action The project would result in no significant impact to land use.	NS	None required.	NS
Reduced Footprint Alternative Same as Proposed Action.	NS	None required.	NS
No Project/ No Action Altern. The mine would be closed. Following closure and reclamation procedures, the Mine site would be returned to use as habitat.	NS	None required.	NS

S = Significant
NS = Not Significant
SU = Significant Unavoidable
CS = Cumulatively Significant
B = Beneficial
* = Cannot be determined at this time

Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Recreational Resources			
Proposed Action The project would result in no significant impact to recreational resources or activities.	NS	None required.	NS
Reduced Footprint Alternative Same as the Proposed Action.	NS	None required.	NS
No Project/ No Action Altern. There would be no impact to recreational resources/activities.	NS	None required.	NS
Visual Resources			
Proposed Action Night lighting at the Mine could adversely affect the vision of Marine pilots at CMAGR.	S	Applicant shall ensure that project lighting is pointed toward the ground and not at sensitive receptors. The Applicant shall minimize the presence of reflective material on-site at night that could reflect downward pointed light up or toward sensitive receptors.	NS
Night lighting could affect drivers on SR 78 and campers near Glamis and Boardmanville.	S	Applicant shall ensure that project lighting is pointed toward the ground and not at sensitive receptors.	NS

S = Significant
NS = Not Significant

SU = Significant Unavoidable
CS = Cumulatively Significant

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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Visual Resources (continued)			
Proposed Action (continued) Some of the OISA expansions will be located closer to SR 78. This will increase the observed size of these mounds incrementally over the OISAs already permitted.	NS	Applicant shall construct the proposed Mine expansion so that it resembles a natural landform to the extent practicable. Measures to be incorporated include contouring the tops and sides of the OISAs. In conformance with the Reclamation Plan as approved by the BLM and Imperial County, disturbed areas shall be recontoured and reseeded or revegetated with native or indigenous species complementary to vegetation found in the surrounding area.	NS
Cumulative impacts associated with implementation of the unbuilt Mesquite Regional Landfill.	CS	Significant, unmitigable impacts are anticipated to result from the Landfill Project. No mitigation would be effective in reducing the cumulative impact level of the Landfill Project plus the proposed Mine expansion, to less than significant.	CS
Reduced Footprint Alternative Same as the Proposed Action.	S, NS, CS	None required.	NS, CS
No Project/ No Action Altern. Following closure of the Mine, no night lighting would be needed.	NS	None required.	NS
OISAs and heap leach pads would continue to be enlarged, under existing permit conditions.	NS	None required.	NS

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NS = Not Significant

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CS = Cumulatively Significant

B = Beneficial
* = Cannot be determined at this time

Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Environmental Health and Safety			
Proposed Action The Project potentially could result in impacts to environmental health and safety related to Mine blasting and use of heavy equipment, the cyanide heap leaching process, the gold recovery process, improper handling of domestic or industrial wastes, the transport and storage of chemical reagents and explosives, on-site accidents, mine equipment traffic accidents, and mine reclamation.	S	Applicant shall incorporate environmental health and public safety protection measures required by local, State, or federal regulations into the design and operation.	NS
Reduced Footprint Alternative Same as Proposed Action.	S	Applicant shall ~~continue to~~ incorporate environmental health and public safety protection measures required by local, State, or federal regulations into the design and operation ~~and closure~~.	NS
No Project/ No Action Alternative. The Mine would be closed, but until then would be operated and closed in accordance with all applicable laws/regulations.	NS	None required.	NS

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* = Cannot be determined at this time

Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Socioeconomics			
Proposed Action The Project would continue existing employment of 164 personnel until approximately 2006, and would add from 20-30 new staff members as well. This would result in continued and increased personal income, local sales and property taxes, and mineral extraction royalties to the State.	B	None required.	B
The Applicant would provide means to ensure Mine closure.	NS	The Applicant shall, as required by Title 23, CCR, Section. 2580 establish an irrevocable closure fund or provide other means to ensure closure and post-closure maintenance of each classified waste management unit. A financial surety that is acceptable to the RWQCB shall be established and maintained, prior to disturbance of proposed expansion areas.	NS
Reduced Footprint Alternative Same as Proposed Action.	B	None required.	B
No Project/ No Action Altern. The mine would be closed and the 164 existing employees would be laid off. This would decrease personal income and government revenues within the area.	SU	No mitigation is available or possible.	SU

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SU = Significant Unavoidable
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Table S-1 (continued)

Summary of Potential Environmental Effects and Mitigation Measures, Proposed Mesquite Mine Expansion

Impact, by Environmental Topic	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
Public Services and Utilities			
Proposed Action ~~The Mesquite Mine is open and functioning as it has for the past 15 years.~~ Public services and utilities to serve the Mesquite Mine ~~it~~ are already in place, and would not require any substantive additions to accommodate the Proposed Action.	NS	Applicant shall supply all MSHA and Cal ~~MSHA~~OSHA-required training, supplies, equipment. Applicant shall provide precipitation drainage facilities per Water Resources mitigation (p. S-10). Applicant shall provide on-site security, fire protection services, and medical services. Applicant shall ~~provide~~ construct a six- to eight-foot high industrial fence, except where existing fencing can be utilized. All proposed expansion areas ~~would~~ shall be fenced where necessary for security and to avoid unauthorized entry. All new fencing surrounding the proposed Mine expansion site ~~would~~ shall be constructed per BLM specifications for tortoise fencing. Existing fencing ~~would be further~~has been improved ~~if required to successfully conclude consultation under Sec. 7 of the Endangered Species Act~~in places to exclude desert tortoises from entering the Mesquite Mine.	NS
Reduced Footprint Alternative Same as the Proposed Action.	NS	None required.	NS
No Project/ No Action Altern. The Mine would be closed, but until then it would utilize existing utility infrastructure, and Mine provided security and fire-fighting personnel. No additional utilities or services would be required.	NS	None required.	NS

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NS = Not Significant

SU = Significant Unavoidable
CS = Cumulatively Significant

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* = Cannot be determined at this time

▪ Section 2 ▪

Comments on Draft EIR/EIS and Responses

Comments on Draft EIR/EIS & Responses

	Letter from	Response Numbers
1.	United States Department of the Interior Fish and Wildlife Service, Ecological Services Carlsbad Fish and Wildlife Office 2730 Loker Avenue, West, Carlsbad, CA 92008 Cathy Sorensen, Acting Assistant Field Supervisor Dated: October 31, 2000	1-1
2.	United States Environmental Protection Agency, Region IX 75 Hawthorne Street, San Francisco, CA 94105-3901 David Farrel, Chief, Federal Activities Office Dated: November 7, 2000	2-1 – 2-23
3.	Law Offices of Morisset, Schlosser, Ayer & Jozwiak 1115 Norton Building, 801 Second Avenue, Seattle, WA 98104-1509 Mason D. Morisset Dated: November 7, 2000	3-1 – 3-5
4.	State of California, Governor's Office of Planning and Research 1400 Tenth Street, P.O. Box 3044, Sacramento, CA 95812-3044 Terry Roberts, Senior Planner, State Clearinghouse Dated: November 7, 2000	4-1
5.	State of California, Governor's Office of Planning and Research 1400 Tenth Street, P.O. Box 3044, Sacramento, CA 95812-3044 Terry Roberts, Senior Planner, State Clearinghouse Dated: October 31, 2000	5-1

	Letter from	Response Numbers
6.	State of California, Governor's Office of Planning and Research 1400 Tenth Street, P.O. Box 3044, Sacramento, CA 95812-3044 Dated: September 6, 2000	6-1
7.	State of California – Business, Transportation and Housing Agency Department of Transportation, District 11 P.O. Box 85406, M.S. 50, San Diego, CA 92186-5406 Bill Figge, Chief, Development Review and Transportation Branch Dated: September 15, 2000	7-1 – 7-2
8.	State of California, Department of Conservation, Office of Mine Reclamation 801 K Street, MS 9-06, Sacramento, CA 95814 Kenneth E. Salt for Jason Marshall, Assistant Director Dated: October 30, 2000	8-1 – 8-29
9.	State of California, Department of Conservation, 801 K Street, MS 9-06, Sacramento, CA 95814 James Pompy, Manager, Reclamation Unit Dated: October 17, 2000	9-1 – 9-9
10.	State of California, Department of Conservation, 801 K Street, MS 9-06, Sacramento, CA 95814 James Pompy, Manager, Reclamation Unit Dated: July 15, 1999	10-1
11.	State of California, Department of Conservation, 801 K Street, MS 9-06, Sacramento, CA 95814 James Pompy, Manager, Reclamation Unit Dated: July 15, 1999	11-1
12.	California State Lands Commission 100 Howe Avenue, Suite 100-South, Sacramento, CA 95825-8202 Mary Griggs, Asst. Chief, Div. of Environmental Planning and Management Dated: November 2, 2000	12-1 – 12-5

	Letter from	Response Numbers
13.	Department of Toxic Substances Control 1011 N. Grandview Avenue, Glendale, CA 91201 Harlan R. Jeche, Unit Chief, Southern California Cleanup Operations – Glendale Office Dated: November 13, 2000	13-1 – 13-2
14.	County of Imperial, Department of Public Works 155 South 11th Street, El Centro, CA 92443-2853 Ismael Gomez, Asst. County Engineer for Timothy B. Jones, Director Dated: October 30, 2000	14-1 – 14-2
15.	Arid Operations Inc., Mesquite Regional Landfill 444 S. 8th Street, Suite B1, El Centro, CA 92443 Robert T. Filler, General Manager Dated: November 2, 2000	15-1 – 15-2
16.	Newport Mining Corporation, Mesquite Mine 6502 East Highway 78, Brawley, CA 92227-9306 Dennis P. Laybourn, Senior Environmental Engineer Dated: November 3, 2000	16-1 – 16-6
17.	The Desert Protective Council, Inc. P.O. Box 3635, San Diego, California 92163-1635 Harriet Allen, DPC Southern Desert Representative Received: October 30, 2000	17-1 – 17-2
18.	California Native Plant Society 6117 Reseda Boulevard, Suite H, Reseda, CA 91335 Steve Hartman, Desert Conservation Chair Dated: October 29, 2000	18-1 – 18-17
19.	Sierra Club No Address Provided Edie Harmon Dated: November 6, 2000	19-1 – 19-43

	Letter from	Response Numbers
20.	Project Underground 1916 Martin Luther King, Jr. Way, Berkeley, CA 94704 Sayokla Kindness, Project Underground/IEN, Indigenous Mining Campaign Project Dated: October 10, 2000	20-1
21.	Barbara A. Ohme 1545 E. 22nd Place, Yuma, AZ 85365 Dated: October 13, 2000	21-1
22.	Manuel M. Leon 640 S. 13th Street, Brawley, CA 92227 Dated: October 23, 2000	22-1
23.	Eleanor J. Russell No Address Provided Dated: October 18, 2000	23-1
24.	Ron C. Cash No Address Provided Received: October 25, 2000	24-1
25.	Heather Gonzales 4114 W. 13th Place, Yuma, AZ 85364 Dated: October 23, 2000	25-1
26.	The Desert Protective Council, Inc. P.O. Box 3635, San Diego, CA 92163-1635 Harriet Allen, DPC, Southern Desert Representative Dated: November 27, 2000	26-1 – 26-10

United States Department of the Interior
Fish and Wildlife Service
Ecological Services
Carlsbad Fish and Wildlife Office
2730 Loker Avenue, West
Carlsbad, CA 92008

In Reply Refer To: NEPA-922.2

OCT 3 1 2000

Memorandum

To: Field Manager, U. S. Bureau of Land Management, California Desert District, El Centro Field Office, Imperial County, California

From: Acting Assistant Field Supervisor Cathy Sorensen

Subject: Extension of Comment Period for the Draft Environmental Impact Report and Environmental Impact Statement for the Proposed Mesquite Mine Expansion, Imperial County, California

1-1 The U.S. Fish and Wildlife Service's (Service) is writing to request an extension of the comment period for the draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the proposed Mesquite Mine Expansion. The Notice of Availability for the referenced document was published in the Federal Register on September 8, 2000, however, the Carlsbad Field Office did not receive the draft EIR/EIS until October 4, 2000. As the mining operation could potentially impact the federally threatened desert tortoise (*Gopherus agassizii*), and an estimated 700 acres of the species' associated habitat, the Service anticipates that a reasonable amount of time will be needed to appropriately assess and prepare comments on the planned expansion. Nevertheless, with the delayed receipt of the draft EIR/EIS, the intended review period was curtailed from 60 days to roughly 30 days. Therefore, the Carlsbad Field Office is requesting a 30-day extension to the November 7, 2000, deadline to more adequately review the project.

The Service would appreciate notification of your intent regarding this request. If you have any questions/comments about this correspondence, please contact Debbie MacAller of my staff at (760) 431-9440.

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PLANNING, BUILDING

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EL CENTRO RESOURCE AREA
EL CENTRO, CA.

RESPONSE TO COMMENT LETTER FROM U.S. FISH AND WILDLIFE SERVICE, SIGNED BY CATHY SORENSON, DATED OCTOBER 31, 2000

Response to Comment 1-1:
No time extension for comment submittal was granted.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

NOV 7 2000

Tim Salt
Bureau of Land Managment
California Desert District
6221 Box Springs Blvd.
Riverside, CA 92507

Dear Mr. Salt:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Report/Environmental Impact Statement (DEIS) for the Mesquite Mine Expansion, Imperial County, California (**CEQ #000301**). Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR 1500-1508, and Clean Air Act Section 309.

The DEIS evaluates alternatives for expanding operations at Newmont Gold Company's existing Mesquite Mine. The Proposed Action includes enlargement of several open pits, waste rock piles, and heap leach pads, encompassing nearly 693 acres, of which 190 acres would require new permits. The BLM-preferred alternative is the Reduced Footprint Alternative, which would disturb approximately 47 fewer acres of unpermitted, undisturbed land than the Proposed Action by reducing and/or eliminating waste rock piles that are proposed under the Proposed Action. The No Action Alternative is also evaluated.

We have rated this DEIS as EC-2 – Environmental Concerns-Insufficient Information (See our enclosed "Summary of Rating Definitions and Follow Up Actions"). Our concerns are based on the project's predicted long-term pit water quality, potential ecological risk, and impacts to waters of the U.S. We recommend additional information be provided in the Final Environmental Impact Statement (FEIS). This information includes pit water quality predictions, the waste rock sampling and disposal plan, a demonstration of compliance with the Clean Water Act Section 404(b)(1) guidelines, mitigation measures, and reclamation and bonding information. Our specific comments are enclosed.

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We appreciate the opportunity to review this DEIS. Please send a copy of the FEIS to this office when it is officially filed with our Washington, D.C., office. If you have any questions, please call me at (415) 744-1584 or Jeanne Geselbracht at (415) 744-1576.

Sincerely,

David Farrel, Chief
Federal Activities Office

003210

Enclosures

cc: Antal Szijj, U.S. Army Corps of Engineers
Richard Cabanilla, Imperial County Planning Department
Neil Krull, Regional Water Quality Control Board, Region 7

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

Water Quality

Section 4.1.2.2 of the DEIS (p. 4.1.2-9) states the long-term chemistry of the pit lakes under the
Proposed Action would be approximately the same as the long-term water chemistry described in
Section 3.2.3.5 for the existing mine pits. However, section 3.2.3.5 does not provide long-term
chemistry for the existing pits. It provides only *existing* pit lake water quality, which is
2-1 predicted to degrade over the long-term from evapoconcentration. It is also unclear whether the
pH will decrease through exposure of sulfide rock in the pit walls to infilling groundwater. The
discrepancies in these two sections of the DEIS should be rectified in the FEIS, and a table or
tables should be provided with predicted long-term pH and contaminant concentrations. The
tables should predict concentrations at different time intervals in the future (e.g., 30 years, 100
years, 250 years). The FEIS should also provide in Section 4.1.3.3 (Ecological Risk Assessment)
2-2 the predicted water quality data that were used to evaluate future ecological risks through the
drinking water and dietary pathways.

The DEIS indicates that future pit water could present potential risk to wildlife from boron,
selenium, silver, and fluoride. However, it states that measures to prevent vegetation growth in
or around pit lakes would significantly reduce the amount of dietary uptake of contaminants by
aquatic and terrestrial wildlife. Furthermore, the DEIS states that the pit lake salinity would be
sufficient to preclude much exposure of waterfowl to contaminants through drinking the pit lake
water. However, the DEIS does not provide predictions of contaminants over time in the pit
lakes, so it is unclear whether unacceptably high metal concentrations will predate salinity
concentrations that would repulse waterfowl. The timing of contaminant concentrations in the
2-3 pit lakes is an important factor in determining ecological risk. As stated in the paragraph above,
the FEIS should provide this information.

The kinetic testing on mine rock was only conducted for 20 weeks, which may not be long
enough to reliably predict acid generation potential. Furthermore, only two samples were used
for kinetic testing, which also cannot be relied upon to predict acid generating potential across
the proposed expansion area at the Mesquite Mine. The Baker Report states that it is not
reasonable to infer the ABA characteristics of HBG or MG materials uniformly across the mine
site, and that only the MG rock type encountered in the Rainbow Pit is clearly net neutralizing (p.
2-27). However, the one sample each of HBG and MG sampled for kinetic testing were
collected from the redox boundary in a borehole from the Rainbow Pit. It is unclear how these
2-4 rock types from the other pits or other areas of the Rainbow Pit would react and affect water
quality. Newmont should continue to run static tests throughout the proposed mine life to
determine acid neutralizing potential. The FEIS should commit to frequent sampling and testing,
as well as isolation of all waste rock or spent ore with an acid neutralizing potential:acid
generating potential (ANP:AGP) of less than 3. A detailed waste rock sampling and disposal
plan should be included as an appendix to the FEIS.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000

Response to Comment 2-1:

The fourth sentence of the fourth complete paragraph on Page 4.1.2.9 of the DEIR/EIS has been revised. Please see Errata-23. The existing water chemistry (geometric mean concentrations of chemical constituents) of the pit lakes is summarized in Table 3.2-7, Page 3.2-25 of the DEIR/DEIS. A complete tabulation of pit lake water quality data obtained from the five sampling events that were conducted between December 1997 and July 1999 is presented in Appendix B of the Hydrologic and Geochemical Study Report for the Proposed Mesquite Mine Expansion (BCI, 1999).

The future water chemistry predicted for the pit lakes under the Proposed Action is presented in Table 3.3 of the Hydrologic and Geochemical Study Report for the Proposed Mesquite Mine Expansion (BCI, 1999). The chemical composition predicted for each pit lake corresponds with the time at which that lake reaches its final lake surface elevation (near steady-state conditions). The pit lake modeling included in the Baker report indicates that the time required for the lakes to reach a steady state elevation varies from just 5 years to 30 years, depending on the area.

Long term water chemistry (e.g. 100 years, 250 years) was not predicted as part of the geochemical study. The reason for this is that the high evaporative rates, combined with relatively low influx of water into the lake (from groundwater inflow and precipitation) result in small, shallow lakes with a rapid evolution of pit lake chemistry. The resulting lakes are alkaline and moderately to highly saline, with sodium, chloride, sulfate and carbonate being the predominant chemical constituents. Over time, salinity will continue to increase to the point of saturation. The geochemical equilibrium speciation model used to predict future water chemistry becomes less effective in these conditions of very high salinity, with predicted results becoming increasingly uncertain with higher ionic strength.

Response to Comment 2-2:

Table 4.1.2-2 has been added to the Final EIR/EIS. The open pit option data from Table 4.1.2.2 were used to determine ecological risk. The USEPA geochemical equilibrium speciation model MINTEQA2 (Allison et al, 1991) was used to simulate the near steady state chemical composition of the pit lakes predicted to develop in the Big Chief, Rainbow and Vista Pits after mining has ceased. The chemistry of water flowing into the lakes was represented by the chemistry of six groundwater monitoring wells in proximity to the pits. Through processes of evaporation and replenishment by groundwater in the closed system represented by the pit lakes, chemistry of the pit lakes changed over time until a final equilibrium chemistry could be predicted.

For purposes of the pit lake modeling and the subsequent Ecological Risk Assessment, two options were evaluated, the open pit option and the backfill option. The open pit option essentially encompasses the two project alternatives evaluated in the DEIR/EIS (Proposed Action, Reduced

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comment 2-2: (continued)

Footprint Alternative). Since the pit lakes would develop regardless of whether the mine expansion would proceed, the open pit modeling exercise also would be representative of the no action alternative evaluated in the DEIR/EIS. The Backfill Option assumes that virtually all of the overburden/interburden generated during the mine expansion would be placed in the pits rather than in out-of-pit OISA's; however, the backfill alternative would not result in total backfilling of the pits.

Following determination of the pit lake equilibrium chemistry, a Screening-Level Ecological Risk Assessment was conducted to determine the ecological risks associated with the pit lakes. The initial step in this study was to determine which of the 45 constituents included in the pit modeling would be considered a Constituent of Concern (COC) for purposes of the risk assessment. Constituents were eliminated based on the following criteria: (1) predicted concentrations below analytical detection limit, (2) predicted concentration below US EPA ambient water criteria levels, or (3) if ambient water criteria levels have not been published, constituents were eliminated if predicted concentrations were below US EPA Tier II values or Lowest Chronic Values. This elimination process resulted in 21 constituents being addressed in the screening-level ecological risk assessment.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comment 2-2: (continued)

Table 4.1.2-2 Predicted Pit Lake Water Quality (ppb), Post-Mining Conditions, Mesquite Mine, CA

	Big Chief North	Big Chief South	Big Chief Southeast	East Rainbow	Vista
Open Pit Option					
Aluminum	124	196	110	87	100
Ammonia (N)	35	56	31	25	28
Antimony	11	17	9	7	<2
Arsenic	< 2	< 2	< 2	< 2	<2
Barium	7	6	7	8	7
Boron	8,010	12,820	7,080	5,590	6.410
Cadmium	< 2	< 2	< 2	< 2	<2
Calcium	1,800	1,420	1,930	2,210	2.050
Carbonate	589,000	847,000	536,000	450,000	
Chloride	1,851,000	2,933,000	1,641,000	1,301,000	1,488,000
Chromium	< 8	< 8	< 8	< 8	<8
Copper	< 6	< 6	< 6	< 6	<6
Fluoride	12,500	19,800	11,100	8,800	10.000
Iron	< 20	< 20	< 20	< 20	<20
Lead	< 3	< 3	< 3	< 3	<3
Magnesium	21,100	27,300	20,100	18,600	19.400
Manganese	< 3	< 3	< 3	< 3	<3
Mercury	< 0.2	< 0.2	< 0.2	< 0.2	<0.2
Nickel	< 23	< 23	< 23	< 23	<23
Nitrate/Nitrite (N)	2,210	3,500	1,960	1,550	1.770
Phosphate (P)	302	479	268	213	243
Potassium	33,300	52,700	29,500	23,400	26.700
Selenium	49	79	44	35	40
Silica	26,800	19,900	28,900	32,800	30.500
Silver	20	31	18	14	16
Sodium	2,538,000	4,023,000	2,252,000	1,786,000	2,041,000
Sulfate	2,187,000	3,466,000	1,940,000	1,538,000	1,758,000
TDS	7,280,000	11,400,000	6,480,000	5,180,000	5,890,000
Zinc	< 7	< 7	< 7	< 7	<7
pH	9.12	9.22	9.09	9.04	9.07
Backfill Option					
Aluminum	188	1,820	451	451	435
Ammonia (N)	270	3,750	929	929	624
Antimony	21	223	55	55	48
Arsenic	< 2	< 2	< 2	< 2	< 2
Barium	7	< 3	5	5	5
Boron	8,640	66,900	16,300	16,300	20,300
Cadmium	< 2	< 2	< 2	< 2	< 2
Calcium	1,420	568	915	915	972
Carbonate	717,000	4,400,000	1,340,000	1,340,000	1,420,000
Chloride	1,975,000	14,800,000	3,660,000	3,660,000	4,560,000
Chromium	< 8	< 8	< 8	< 8	< 8
Copper	< 6	< 6	< 6	< 6	< 6
Fluoride	13,300	83,900	24,500	24,500	30,700
Iron	< 20	< 20	< 20	< 20	< 20
Lead	< 3	< 3	< 3	< 3	< 3
Magnesium	19,300	79,700	24,000	24,000	33,000
Manganese	< 3	< 3	< 3	< 3	< 3
Mercury	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Nickel	< 23	< 23	< 23	< 23	< 23
Nitrate/Nitrite (N)	2,670	22,300	5,540	5,540	6,180
Phosphate (P)	615	6,760	1,680	1,680	1,420
Potassium	35,500	265,000	65,700	65,700	82,000
Selenium	66	541	134	134	152
Silica	24,500	5,750	16,900	16,900	14,100
Silver	30	291	72	72	70
Sodium	2,740,000	20,800,000	5,140,000	5,140,000	6,340,000
Sulfate	2,340,000	17,600,000	4,350,000	4,350,000	5,410,000
TDS	7,890,000	58,000,000	14,700,000	14,700,000	17,900,000
Zinc	< 7	< 7	< 7	< 7	< 7
pH	9.19	9.56	9.35	9.35	9.35

Source: SMI (2000)

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comment 2-3:

As indicated above, the predicted future water chemical composition for each pit lake corresponds with the time at which that lake reaches its final lake surface elevation (near steady-state conditions). The high evaporative rates, combined with relatively low influx of water into the lake (from groundwater inflow and precipitation) result in small, shallow lakes with rapid replacement time and an accompanying rapid evolution of pit lake chemistry.

The pit lake modeling included in the Baker report indicates that the time required for the lakes to reach a steady state elevation varies from just 5 years to 30 years, depending on the area. Considering the already brief periods of time for lake equilibration and water chemistry modeling, additional modeling at intermediate intervals was not warranted. Also, please see Response to Comments 19-22 regarding dietary and drinking water intake issues.

Response to Comment 2-4:

Waste rock evaluations have been routinely conducted on all major rock units encountered at the Mesquite Mine for the life of the operation. Hundreds of static tests (acid/base accounting) document the virtual absence of acid-generating rock in the Mesquite District. Kinetic tests have been conducted on the few samples which indicated some acid generating potential (AGP). However, the results of those tests indicate that the AGPs of those rock units are very low and that buffering capacity is adequate to inhibit acid generation. The low sulfide sulfur content of the waste rock, coupled with adequate buffering, very low rainfall and very high evaporative conditions negate the likelihood of any acid production from these rock units.

However, additional static testing will be routinely performed as part of the proposed Mesquite Mine expansion. Drill hole cuttings will be visually examined to identify waste rock with the potential for acid generation. Samples of this material will be composited on a weekly basis and subjected to static testing for ANP:AGP. Additional kinetic testing will be performed as needed to evaluate rock units, which fail to meet the static test criteria for AGP:ANP ratio.

Isolation of rock failing static test criteria for AGP:ANP ratio is not required, based on the vast preponderance of Acid-Neutralizing Potential rock at the Mesquite Mine.

Waters of the U.S.

The proposed expansion of the Mesquite Mine would involve the discharge of fill materials into approximately 25 acres of waters of the United States, thereby requiring an authorizing permit from U.S. Army corps of Engineers pursuant to Section 404 of the Clean Water Act (CWA).[1] Under CWA Section 404 EPA has the responsibility to comment on proposed discharges that are not consistent with the requirements of the 404(b)(1) Guidelines (40 CFR part 230).

2-5 In comments prepared for the administrative draft of BLM's Mesquite Mine EIS (EPA letter dated April 6, 2000) EPA recommended that the NEPA analysis be consistent with the 404(b)(1) analysis to ensure that a full range of alternatives are evaluated in the DEIS. However, as is noted in the DEIS (page 2-39), demonstration of compliance with the provisions of the Guidelines has not been incorporated directly into the NEPA evaluation; rather it is to occur as a parallel, but separate, process. While EPA has been working with the applicant and the U.S. Army Corps of Engineers on the 404(b)(1) analysis such that this analysis will be adequate for the Corps to use as the basis of its Section 404 permit decision, EPA continues to recommend consistency between the NEPA and CWA range of project alternatives.

EPA has the following additional comments on issues relevant to compliance with Section 404 of the Clean Water Act:

2-6 (1) The NEPA evaluation should modify the current project purpose to comply with requirements of CWA Section 404. EPA has recommended the project purpose for both NEPA and CWA be defined as the "profitable return on mining, limited to expansion opportunities at existing mines,

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[1] The DEIS (page 2-34) states impacts to 22.5 acres of waters of the U.S. from the proposed action, while on page 4.1.2-4 states that the proposed action would impact 24.97 acres of waters of the U.S. The DEIS delineation of waters of the United States is based on work prepared by Jones and Stokes (August and September 1999). The DEIS states that the U.S. Army Corps of Engineers, for the purposes of permitting discharges of fill to waters of the U.S. under Section 404 of the Clean Water Act, will make the official determination of waters of the United States concurrent with the Section 404 process.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comments 2-5:

Since issuance of the DEIR/EIS, the United States Supreme Court rendered its decision in Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, No. 99-1178 (January 9, 2001). Under that decision, the Court ruled that the Clean Water Act does not extend to isolated, intrastate waters where use by migratory birds is the sole basis for establishing a federal interstate commerce nexus. The desert washes and tributaries thereto within the Mesquite Mine project area do not constitute waters of the United States, since they are isolated, non-navigable, intrastate waters. Based on this decision, the U.S. Army Corps of Engineers determined the Mesquite expansion project "is not subject to our jurisdiction under Section 404 of the Clean Water Act and a Section 404 permit is not required from our office." (letter to Newmont Mining Corporation from Mark Durham, Chief, South Coast Section Regulatory Branch, U.S. Army Corps of Engineers, March 9, 2001). A copy of that letter is provided on the next page.

This is consistent with the U.S. Army Corps of Engineers' original position that it did not have jurisdiction over activities related to the Mesquite Mine. For example, in a comment letter on the original EA/EIR for the Mesquite Project, the Corps of Engineers declined to comment on the project, stating that "[t]he proposed plan does not conflict with existing or authorized plans or programs of the Corps of Engineers. The proposed project area is not within Corps jurisdiction." (Letter to Imperial County Planning/Building Department from Carl F. Enson, Los Angeles District, Corps of Engineers, October 22, 1984). Similarly, in 1995, Mesquite Mine personnel contacted the Corps of Engineers regarding a proposed wash diversion and was informed that the proposed activity was "non-jurisdictional." (Letter from Mark Durham, Chief, South Coast Section, L.A. District, Corps of Engineers to Dennis Vaughn, Santa Fe Pacific Gold Corp. [Newmont's predecessor as operator], August 7, 1995).

Because there are no jurisdictional waters within the boundaries of the proposed Mesquite Mine expansion, Section 404 of the Clean Water Act and the 404(b)(1) guidelines referenced in Response to Comments 2-5 through 2-14 are not applicable to the proposed expansion.

Response to Comments 2-6:

Please see Response to Comment 2-5.

DEPARTMENT OF DEFENSE

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
SEVEN OAKS DAM RESIDENT OFFICE
32330 SANTA ANA CANYON RD
HIGHLAND, CALIFORNIA 92346

REPLY TO
ATTENTION OF:

MAR - 9 2001

Office of the Chief
Regulatory Branch

Newmont Mining Corporation
Attention: Craig Smith
Mesquite Mine
6502 E US Highway 78
Brawley, California 92227-9306

Dear Mr. Smith:

Reference is made to your letter dated February 19, 2001, requesting our office to reevaluate your pending application (No. 200100062-AJS) for a Department of the Army Permit to expand the Mesquite Mine in a series of unnamed washes near Glamis, Imperial County, California.

As you are aware, the U.S. Supreme Court recently ruled that isolated, intrastate waters that are used by migratory birds are not subject to Federal jurisdiction under the Clean Water Act (Supreme Court Decision No. 99-1178 for Solid Waste Agency of Northern Cook County, Petitioner v. U.S Army Corps of Engineers dated 9 January 2001). Based on the information furnished in your letter and a review of your pending application by our staff, we have determined that your proposed project does not discharge dredged or fill material into a water of the United States or an adjacent wetland. Therefore, the project is not subject to our jurisdiction under Section 404 of the Clean Water Act and a Section 404 permit is not required from our office.

The receipt of your application is appreciated. If you have any questions, please contact Antal Szijj of my staff at (909) 794-7704.

Sincerely,

fo Mark Durham
Chief, South Coast Section
Regulatory Branch

cf: USBLM, Attn: K. Marty

within the company's geographic range." The current NEPA project purpose is inconsistent with the Guidelines in that it constrains the analysis of alternatives to a single site.[2]

2-7 (2) EPA strongly recommends incorporation of the full 404(b)(1) analysis into the FEIS to facilitate the review and potential permitting of the proposed action, and to ensure that the NEPA and Guideline evaluations are compatible and consistent. To that end, EPA recommends the EIS be modified to demonstrate: (a) that a full range of practicable alternatives to the proposed discharge of fill material to waters of the United States has been considered (including on-site reconfiguration of the project to avoid impacts, off-site alternatives for less damaging practicable alternative, etc.); (b) that impacts to waters of the United States are avoided to the maximum extent practicable; (c) that any project related impacts to waters of the U.S. are held to the minimal amount necessary to implement the proposed action; and (d) that all unavoidable impacts to waters of the U.S. are compensated fully in terms of area of impact, and the replacement of the values and functions of these waters.

2-8 (3) The DEIS states that impacts to waters of the United States would be offset by the preservation of other waters of the United States in association with the proposed preservation of desert tortoise habitat (DEIS page 4.1.2-4). Simple preservation of aquatic resources to compensate for adverse impacts to waters of the United States is inconsistent with the EPA/Corps Memorandum of Agreement for mitigation of impacts permitted under CWA Section 404(b)(1). As simple preservation does not provide adequate offset for the loss of waters of the United States, EPA would not concur on such a proposal. In addition to the proposed habitat preservation measures, EPA recommends that BLM evaluate mitigation opportunities to recreate aquatic resources in association with the proposed construction of three drainage diversion channels -- East Rainbow, Vista, and North Extension Diversion Channels (DEIS page 4.1.2-2). A combined creation and preservation compensation effort may provide adequate offset for adverse impacts to aquatic resources.

(4) The DEIS states that the productive life of the proposed project is six years, or longer depending on economics. At the close of the operation, the site would be subject to an environmental restoration effort to be completed in five years or when the restoration success criteria are met. The DEIS (page 4.2-6) states that no additional impacts to waters of the United

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[2] The Guidelines at several places clearly support consideration of alternative locations for projects involving discharge of fill to waters of the United States: Section 230.10(a)(1)(ii) references conducting the project "...at other locations in waters of the United States...." Similarly Section 230.10(a)(2) references "...an area not presently owned by the applicant...." Both of these sections of the Guidelines have been interpreted as supporting the need for the consideration of off-site alternatives for projects involving the discharge of fill material to jurisdictional waters of the United States.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comments 2-7:

Please see Response to Comment 2-5.

Response to Comments 2-8:

Please see Response to Comment 2-5.

States would result from the reclamation project, including to waters associated with the
proposed mine expansion mitigation measures. However, as noted above, the DEIS proposed
mitigation measures for impacts to waters of the United States are inadequate and other
opportunities for offsetting adverse impacts to aquatic resources should be considered. The FEIS
2-9 should include an evaluation of whether the planned reclamation measures would affect a
modified mitigation plan that includes mitigation measures that are consistent with the
requirements of the 404(b)(1) guidelines.

2-10 (5) The FEIS should include a brief summary of the regulatory history of the existing facility,
2-11 including: (1) the Corps permit history; (2) summary of existing impacts to waters of the United
2-12 States from the existing mine, infrastructure and processing facilities; (3) demonstration that the
existing impacts to waters of the United States have been offset; (4) evaluation of whether the
2-13 proposed mine expansion will affect the mitigation measure taken to date to offset previous
impacts to waters of the United States; and (5) demonstration of compliance with any standard
and special conditions of the Corps permit issued for the existing impacts to waters of the United
States. To date, there has been no demonstration that the existing project is in compliance with
2-14 the requirements of CWA Section 404 or whether compensation was provided for previous
impacts to waters of the United States. EPA would not concur on a permit for the proposed mine
expansion without a compliance demonstration for the current project.

Reclamation and Bonding

According to the DEIS (pp. 2-12 & 2-13), if rinsing of the Vista leach pad is not successfully
completed, the spent ore would be relocated to Pad 6. It is unclear why BLM would not require
the Vista pad to be completely rinsed before allowing the spent ore to become a problem
2-15 elsewhere on the site. In this instance, the spent ore would be moved from BLM-managed
property in Section 9 to Newmont-owned property in Section 16, which could affect BLM's
ability to enforce the cleanup standard. In fact, if the Vista pad is not successfully rinsed before
Pad 6 goes through rinsing and closure, the Vista pad closure should be used to recalculate the
bond for Pad 6 closure.

Furthermore, the DEIS (pp. 2-12 & 2-13) indicates that if the Vista pad is successfully rinsed, the
spent ore would be relocated to Vista Open Pit. The FEIS should identify in a table those
2-16 RWQCB detoxification standards for cyanide and metals that the Mesquite Mine must meet in
accordance with RWQCB Order No. 95-016. The FEIS should also discuss whether these
standards were meant to apply to spent ore on a dry terrace above the pit lake in an open pit. The
DEIS does not address the Vista pad spent ore in the ecological risk assessment discussion. The
2-17 FEIS should discuss the ecological risk of storing the Vista pad spent ore in the pit above the pit
lake where contaminants could be leached from the waste rock pile into the pit lake.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comments 2-9:
Please see Response to Comment 2-5.

Response to Comments 2-10:
Please see Response to Comment 2-5.

Response to Comments 2-11:
Please see Response to Comment 2-5.

Response to Comments 2-12:
Please see Response to Comment 2-5.

Response to Comments 2-13:
Please see Response to Comment 2-5.

Response to Comments 2-14:
Please see Response to Comment 2-5.

Response to Comment 2-15:
Movement of spent ore from the Vista Pad to Pad 6 would not be conducted unless the translocation was approved by BLM and California Regional Water Quality Control Board. Based on the nature of the ore and operational experience (which indicates significant degradation of cyanide within the leach pads), Newmont anticipates that there will be no problem rinsing the Vista Pad in place to prescribed closure standards.

Closure bonding is calculated on a unit basis based on the volume of spent ore to rinse, not on the rinsing of a specific leach pad. If the Vista spent ore would be moved to another location prior to the completion of rinsing, closure bonding on the translocated ore would remain in place until rinsing was completed.

Response to Comment 2-16:
Waste Discharge Order 95-016 specifies standards for heap detoxification and specific sampling protocol to determine detoxification is complete. Discharge Order Specification No.16 states as follows:

> When abandoning leached ore residue, the procedure for determination of whether free cyanide (CN^-) in the ore residue has been neutralized to a satisfactory level shall be as follows:

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comment 2-16: (continued)

a. A sampling grid for the ore pile or segment on the leach pad shall be submitted for approval by the Regional Board's Executive Officer. The sampling grid shall contain at least ten sampling locations on the ore pile or segment being abandoned.

b. The sample to be analyzed from each sampling location shall contain 100 grams as a aliquot of samples taken as set forth below, except that no sample shall be taken within three feet above the plastic liner unless special provisions are made to avoid penetrating the liner or for sealing said penetrations:

   1. An ore pile thirty feet or less in depth shall have samples taken at 25, 50, and 75 percent of depth.
   2. An ore pile greater than 30 feet in depth shall have samples taken every ten feet in depth.

c. The sample analysis shall be as set forth in Attachment A, incorporated herein and made part of the Board Order.

d. The maximum allowable free cyanide (CN^-) shall not exceed the following levels in the filtrate portion of a 5:1 extraction.

   1. Ninety percent of at least 10 samples shall contain less than 1 mg/l free cyanide (CN^-) in the filtrate.
   2. None of the samples shall contain more than 1 mg/l free cyanide (CN^-) in the filtrate.

e. For any sampling location that indicates a free cyanide level in excess of 2 mg/l in the filtrate, the areal extent of the inadequately detoxified area shall be determined and detoxified so that the cyanide levels in that particular ore pile will comply with the limitations contained herein.

In California, mining wastes are typically classified as either Group A, B or C wastes according to their potential to impact water quality. In order for the rinsed leach pile to be abandoned, the rinsed material would have to meet the standards for a Group C mining waste (CCR Title 27, Div. 2, Chapter 7, Sec. 22480). This classification designates mining waste from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives, other than turbidity. The designation of Group C waste would be made by the Regional Water Quality Control Board (RWQCB). In making this determination, RWQCB will consider: (Sec. 22480, (c)):

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comments 2-16: (continued)

1. whether the waste contains hazardous constituents only at low concentrations;
2. whether the waste has no or low acid-generating potential; and
3. whether, because of its intrinsic properties, the waste is readily containable by less stringent measures.

The determination of whether the rinsed material contains hazardous constituents in low concentrations would be based on successfully attaining the cyanide closure criteria described above, as well as test results indicating low levels of metals in leachates. Required testing for metals would include the Synthetic Precipitation Leachate Procedure (SPLP) developed by EPA (Method 1312).

Response to Comment 2-17:

The ecological risk from storing leached and ore residue from the Vista Pad in a terrace above a pit lake in the Vista Open Pit is not considered significant for several reasons:

1. Prior to relocating rinsed ore from the Vista Pad to the Vista Pit it would have to be tested and classified as a Group C waste by RWQCB. As indicated above, the Group C classification requires (1) levels of cyanide below closure limits, (2) low levels of leachable metals, and (3) non-acid generating characteristics. The required testing for cyanide (RWQCB procedure) and metals (Synthetic Precipitation Leachate Procedure) is meant to simulate the interaction of the rinsed ore with precipitation, similar to what would occur with a terrace of rinsed leach pad ore being located in a pit.

2. Climatic conditions at the site are not conducive to leaching metals or other constituents from the spent ore. Very low rainfall (average 3 inches per year) combined with high evaporation rates indicates that it would be unlikely for rainwater to penetrate the spent ore stockpile, pass through the stockpile and produce discharge from the stockpile with a high concentration of leached metals.

3. As part of the hydrology and pit lake study, Baker (1999) examined the rock-water interactions between pit lakes and principal rock materials. Some of the rock geochemistry data used in the examination was of mineralized drill intervals, that would not be significantly different, from the standpoint of whole rock chemistry, than Vista spent and rinsed ore. The ecological risk assessment concluded that the risk associated with this rock - water interaction, when mitigated, would be less than significant. Please see Response to Comment 19-22 for discussion regarding the ecological risk assessment.

2-18 The DEIS (p. 2-24) indicates that there may not be sufficient volumes of topsoil to cover the waste rock dumps and leach pads after closure. In addition, plant establishment at only 25 percent of the natural plant density and diversity formerly present in the area would be considered successful revegetation. The FEIS should discuss how this could affect air quality over a reclamation period of many years from wind erosion on waste rock dumps and leach pads, as well as measures that would be required to prevent this.

2-19 The FEIS should explain why a 25 percent density and diversity measure would be considered
2-20 successful revegetation. Would longer-term monitoring be required? Would funds be
2-21 established to ensure a greater density and diversity over the long term?

2-22 The DEIS (p. 2-25) indicates that tamarisk might be sprayed with an approved herbicide. The FEIS should list restrictions for herbicide use to ensure residue is not washed down channels during storms, affecting other plants.

2-23 The FEIS should include an itemization of the closure and reclamation bond(s) required by the State of California and BLM, as well as any post-closure monitoring costs that may be necessary.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comment 2-18:

Plant cover on the natural desert surfaces varies from less than 0.1% on desert pavement surfaces to an average of 5% in areas of upland topography. This low plant cover does not significantly abate wind erosion and the creation of fugitive dust. Likewise, reduced plant cover in reclaimed areas would not, in itself, result in significantly higher wind erosion than nondisturbed areas. Wind erosion from disturbed areas is not a function of plant cover, but is more influenced by the size of surface particles and stability of the soil surface. In this climate, ground surfaces that are not continually disturbed by traffic develop a lag gravel surface and a hard crust so that wind erosion is quickly diminished.

During mine operations, a vigorous dust control program is proposed to assure that the actual amount of particulates generated will remain less than 20 percent of the potential amount that could be generated by site activities and wind erosion. This high level of control will be achieved by the frequent application of water containing chemical dust suppressants (i.e., magnesium chloride or lignin sulfonate). The combination of the resulting chemically-induced stability and the natural crust formed on undisturbed desert soil material will assure that fugitive dust generation from wind erosion will continue to be insignificant during the reclamation period that follows closure of the mine.

Response to Comment 2-19:

Based on comments received, the proposed success criteria for revegetation has been modified from that described in the DEIS/DEIR. The modifications result in increasing the success criteria for revegetation. A revised Reclamation Plan for the Mesquite has been prepared and submitted to Bureau of Land Management and Imperial County Planning Department, lead agency under the California Surface Mining and Reclamation Act (SMARA).

Reclamation will result in generally two types of recreated landforms with corresponding vegetation types: 1) drainages (wash complexes) and associated side slopes reclaimed to microphyll woodland type habitat, and 2) graded microcatchment basins on open slopes and flats – a modified type of upland shrub scrub vegetation

Separate revegetation standards are proposed for areas of wash habitat reclamation and for reclaimed areas outside the washes. The success criteria are based on the results of baseline vegetation surveys performed by Bamberg Associates ("Vegetation Baseline Monitoring Report," September 1999) and comparison with similar natural vegetation types.

The reclamation standard for wash habitat reclamation will be 50% of the diversity, and 60% of the perennial density of the undisturbed large washes as determined by quantitative surveys for two consecutive years.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comments 2-19: (continued)

The proposed reclamation standard for areas outside the major washes is based on the baseline standard for alluvial flats and shallow wash complex. The cover and density standard is 35 percent of the perennial plant density measured during the baseline vegetation surveys. The standard for species diversity for these areas is 30% of the values measured during the baseline vegetation surveys.

The proposed success criteria are discussed in greater detail in Response to Comment 8-26.

The standard for revegetation success is based on reasonably achievable revegetation results that will provide a plant density adequate to support long-term vegetation. At the described densities and diversities, there is sufficient species richness and plant density to produce growth and seeds to sustain vegetation communities until natural plant succession restores a natural plant cover, density and diversity. At maturity, the plant cover and density will be variable across the reclaimed site, similar in character to what exists in undisturbed areas, and will reflect soil and moisture conditions of a particular site.

The success criteria are considered benchmarks, indicating a sustainable vegetation community has developed in the area, that active management of the reclaimed sites is no longer required and that reclamation sureties associated with revegetation can be released. At maturity, cover and density will be greater than the proposed standards.

Response to Comment 2-20:

No. Once the criteria are met, no further monitoring would be required. Reclamation techniques to be utilized at the Mesquite site have been used successfully to reclaim two other nearby mine sites in Imperial County. Long term monitoring has not been necessary at these reclaimed mines. Criteria for success were attained within 2 to 3 years for areas revegetated during the period 1995 to 1997.

Achieving reclamation standards is highly dependent on adequate rainfall. In the event of a protracted drought (greater than 5 years), monitoring shall be continued on a yearly incremental basis until the success criteria is met. Reclamation bonding is generally more than sufficient to cover reseeding of areas not meeting the revegetation success criteria. Reclamation funds are left in place until reclamation is considered successful and sureties are released.

Response to Comment 2-21:

No. Please see Response to Comment 2-20.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comment 2-22:

Currently, the herbicide Garlon 3A® is used in the tamarisk control program at the site. The herbicide is recommended by BLM, based on efficacy and relatively short term persistence in the environment. Only qualified personnel will apply the herbicide following label specifications. To insure herbicide is not washed down channels, it is used sparingly and is not broadcast sprayed over areas of infestation. Herbicide use is restricted to direct application on stumps of tamarisk cut to near ground level. Application is by hand-operated, low pressure sprayer, with the spray confined to the area of the cut stump. This type of application is specific to a small area on the plant base and is effective at killing the roots of the plant. Precautions are in place to insure that over-application of the herbicide does not occur.

Response to Comment 2-23:

The current financial assurance held by Newmont Mining Corporation to cover the reclamation and closure liabilities associated with the Mesquite Mine totals $3,686,081. The following sureties are currently held for the Mesquite Mining operation:

Surety Type	*Number*	*Amount*	*Payee*	*Comment*
Bond	158766270	$3,048,081	State of California, County of Imperial, BLM	Mine site Reclamation and Closure Bond
Bond	123940151	$550,000	California Regional Water Quality Control Board	Leach Pad Closure Bond
Bond	141808389	$88,000	State of California, County of Imperial, BLM	Exploration drilling reclamation bond

Reclamation, Closure and Post-closure costs have been recalculated as part of the *Mesquite Mine Closure and Reclamation Plan, (November 1998, revised November, 1999, Final October, 2001).* The plan includes updated reclamation costs estimates for reclamation and closure of the existing site as well as reclamation costs associated with the proposed expansion. Cost estimates contained in the plan indicate current reclamation and closure costs for the site at $7,737,168. With development of the expansion project, reclamation and closure costs will increase by $2,393,895.

Newmont Mining Corporation will replace the existing bond for $3,048,081 with a financial assurances in the amount of $7,737,168 to cover the currently estimated reclamation and closure liabilities at the site. Newmont will post suitable financial assurances for closure payable to RWQCB or BLM. Payees for the revised reclamation surety will be County of Imperial, State of California and BLM.

RESPONSE TO COMMENT LETTER FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, SIGNED BY DAVID FARREL, DATED NOV. 7, 2000 (continued)

Response to Comments 2-23: (continued)

Total estimated reclamation and closure costs associated with the proposed Mesquite expansion is $2,393,895. Prior to initiating the Mesquite expansion program, Newmont Mining Corporation shall post a surety bond in this amount with the appropriate agencies. Newmont will post suitable financial assurances for closure payable to RWQCB or BLM. Payees for the reclamation surety associated with the Mesquite Expansion will be County of Imperial, State of California and BLM.

Included in this cost estimate are post-closure monitoring costs for monitoring of groundwater for a period of five years and monitoring of reclamation and revegetation for a period of ten years. Total post closure monitoring costs are approximately $136,000.

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PLEASE REPLY TO THE
SEATTLE OFFICE

Via Facsimile

November 7, 2000

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939 Main Street
El Centro, California 92243

Re: Quechan Indian Tribe's Comments on DEIS/DEIR for Proposed Expansion of the Existing Mesquite Gold Mine

Dear Mssrs. Miller, Marty and Heuberger:

The following are the comments of the Quechan Indian Tribe ("Tribe") on the DEIS/DEIR for Proposed Expansion of the Existing Mesquite Gold Mine. The Tribe's concerns mainly relate to the mine expansion's impact on its water and cultural resources.

1. Water Issues. The Quechan reservation at its current site was established in 1884, which gave the Tribe, under federal law, reserved rights to water in the Colorado River with a priority date of 1884. *See Arizona v. California I*, 376 U.S. 344 (1964); *Arizona v. California II*, 460 U.S. 605 (1983). Some of the Tribe's water rights were allocated by federal decree, *see id.*, and others remain under dispute. *See Metropolitan Water District v. United States*, 628 F. Supp. 1018 (S.D. Cal. 1986), 830 F.2d 139 (9th Cir. 1987); *California v. United States*, 490 U.S. 920 (1989); Report of the Special Master, *Arizona v. California*, No. 8 Original, July 28, 1999. The United States Supreme Court recently allowed the Tribe to pursue its rights to 25.6 billion gallons per year of Colorado River water. *Arizona v. California*, _ U.S. _, 120 S. Ct. 2304, 147 L. Ed. 2d 374 (2000).

Anthropologists have estimated that, in the past, Quechan Indians obtained at least half of their food from agriculture. *Quechan Tribe of the Fort Yuma Reservation v. United States*, 8 Ind. Cl. Comm. 111, 119 (1959). Today, the Tribe and its members use water for agriculture and raising crops for commercial markets and subsistence use, as well as for governmental and proprietary purposes, including domestic use and business activities. The Tribe also may market water not immediately necessary for tribal purposes.

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3-1 The Mesquite DEIS states that the "project area is not within an area that is considered in or part of the Colorado River system for purposes of water rights jurisdiction." DEIS at 3.2-8. This, and the rest of the DEIS, is an inadequate description of the water situation. For example, does the "project area" include Mesquite Mine well field, which apparently will be the sole supply source of additional water for the expansion? Further, the DEIS statement does not reference the recently issued U.S. Geological Survey report entitled, "Method to Identify Wells that Yield Water that will be Replaced by Water from the Colorado River Downstream from Laguna Dam in Arizona and California," BOR Water-Resources Investigations Report 00-4085 (2000)." That report describes the physical parameters of the Colorado River Aquifer which underlies much of this area. A more complete statement concerning the source of water and its relationship to the Colorado River Aquifer is needed.

3-2 It appears from the DEIS that the mine expansion will not require any additional Colorado River water, via the All American Canal or from elsewhere. However, this is undocumented and inadequately explained. Please inform us if this assumption is correct and please clarify this matter in the final EIS.

3-3 The DEIS states that the Mesquite Mine is located within the Salton Sea Drainage Basin, "a closed hydrologic system." However, this statement is not documented with references to the BOR study noted above. It is unclear whether the mine expansion will have any adverse water quality effects on the Colorado River. Please clarify this matter in the final EIS.

2. **Cultural Resources**. The Tribe continues to be concerned about the mine expansion's impact to its cultural resources. The DEIS contains the following statement:

3-4

> The records review and intensive ground survey identified 40 acres of cultural activity, of which 11 had been recorded previously, and 29 were new. Of these 40 indicators of cultural activity, 21 were sites more than 50 years old, two were less than 50 years old, and seven were isolates. After eliminating from further consideration four sites that were outside the APE, the two recent sites, and seven isolates, a total of 27 sites were evaluated for eligibility to the National Register, including sparse lithic scatters, a lithic scatter with pottery, a lithic scatter with stacked rock feature and mining prospect, two temporary camps, and a trail segment with cleared circle and rock cairns. After intensive recordation and application of the California Archaeological Resource Identification and Data Acquisition Program, where appropriate, 20 sites were found to not meet criteria for eligibility to the National Register. The remaining seven sites were subjected to additional recording and limited testing, following approval by BLM.

RESPONSE TO COMMENT LETTER FROM LAW OFFICES OF MORISSET, SCHLOSSER, AYER & JOZWIAK (FOR QUECHAN TRIBE), SIGNED BY MASON D. MORISSET, DATED NOVEMBER 7, 2000

Response to Comment 3-1:

The Mesquite Mine is a fully permitted, operating mine. Regulatory approval of the mine expansion would result in extending the life of the mine by approximately six years. Major operating permits are in place and would require no revisions in order to proceed with the proposed expansion. The proposed expansion will involve no significant operational changes from what is currently permitted and the existing mine infrastructure will be utilized to a large degree during the expansion period.

Water requirements during the expansion period will be supplied by the existing Mesquite Mine Well. Water consumption from the well field is permitted through a Conditional Use Permit issued by Imperial County. Groundwater withdrawal rates during the expansion period will remain well below the permitted levels of 4,033 acre-feet per year.

The area included in the USGS study (WRIR 00-4085) extends to the southern tier of sections in T13S, R19E, which includes the mine well field but does not include the mine site itself. The boundary of the River Aquifer, as defined by the USGS, appears to include the aquifer tapped by the well field but does not include the ground water units of the mine site. The boundary of the River Aquifer, as delineated in this very northern portion of the USGS study area, is defined with a considerable degree of uncertainty since it is based on a very few data points and does not include any of the hydrologic data gained from drilling hundreds of drill holes immediately north of the study area, in the Mesquite Mine area. It also does not include data from wells located immediately west of the Mesquite well field. Based on the USGS report, in particular Plates Nos. 1 and 3 of the report, the Mesquite well field has not and will not consume water that will be replaced by water from the Colorado River.

Response to Comment 3-2:

As indicated above, water requirements for the expansion will come from the existing, permitted Mesquite well field. Pumping rates will be within the currently permitted rates. The expansion will require no water from the Colorado River or the All American Canal.

RESPONSE TO COMMENT LETTER FROM LAW OFFICES OF MORISSET, SCHLOSSER, AYER & JOZWIAK (FOR QUECHAN TRIBE), SIGNED BY MASON D. MORISSET, DATED NOVEMBER 7, 2000 (continued)

Response to Comment 3-3:

Please see Healy, A.G., G.H. Hughes and B. Irelan, 1966, Hydrologic Regimen of Salton Sea, California, U.S. Geological Survey, Professional Paper 486-C, 32 pp. This reference defines the extent of the Salton Sea drainage area and states that it is "topographically distinct" from that of the Colorado River. The mine expansion, therefore, is not expected to influence water quality in the Colorado River.

Response to Comment 3-4:

Resources were evaluated on the basis of criteria given in 36 CFR 60.4, National Register criteria for evaluation. The Quechan Tribe was involved when BLM carried out the identification and evaluation of potential historic properties.

> 3-4 (cont'd.) Implementation of the test plan resulted in the collection of additional documentation. This information was then analyzed and incorporated into the resource inventory for the Proposed Action. Site record files were revised as necessary. As a result of this process, the research potential of the seven identified resource sites has been documented. BLM determined these sites do not meet criteria of eligibility to the National Register of Historic Places.

Mesquite mine Expansion Draft EIR/EIS, § 3.4, p. 3. We request that this issue be revisited. For example, what criteria did BLM use to determine non-eligibility?

The DEIS also contains the following statement:

> 3-5 While exercising its responsibility for Native American consultation, BLM approved Mooney & Associates to request assistance from the Quechan Cultural Committee in identifying properties which may be of religious or cultural significance to the Quechan. The Quechan Cultural Committee did not indicate to the BLM or Mooney & Associates that there are such properties within the APE.

Id., at p. 1. A more positive statement from the Quechan Tribe on religious or cultural sites should be sought. This statement is ambiguous as to whether the Tribe is concerned about historical sites.

Thank you for your consideration of these comments.

Sincerely yours,

MORISSET, SCHLOSSER, AYER & JOZWIAK

Mason D. Morisset

cc: The Honorable Mike Jackson Sr., President
Quechan Tribal Council

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cln:11/07/00

RESPONSE TO COMMENT LETTER FROM LAW OFFICES OF MORISSET, SCHLOSSER, AYER & JOZWIAK (FOR QUECHAN TRIBE), SIGNED BY MASON D. MORISSET, DATED NOVEMBER 7, 2000 (continued)

Response to Comment 3-5:

BLM's consultation efforts with the Quechan Tribe, including the Quechan Cultural Committee, included correspondence, meetings, field trips, monitoring and phone calls which occurred over a period of many months. The Tribe was given the cultural resources report to review. During the consultation process, the Quechan Tribe did not comment on the cultural resources within the Area of Potential Effect (APE). The statement in the DEIR/EIS is neutral with respect to the values held by the Quechan Tribe; it simply stated that the Tribe did not indicate to either BLM or Mooney & Associates that the resources were significant.

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse

Gray Davis
GOVERNOR

Steve Nissen
ACTING DIRECTOR

November 7, 2000

Jurg Heuberger
Imperial County Planning and Building Department
939 Main Street, Suite B-1
El Centro, CA 92243

Subject: CUP 98-0022 Mesquite Mine Expansion
SCH#: 1998121054

Dear Jurg Heuberger:

The enclosed comment (s) on your Draft EIS was (were) received by the State Clearinghouse after the end of the state review period, which closed on October 30, 2000. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document.

4-1 The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (1998121054) when contacting this office.

Sincerely,

Terry Roberts

Terry Roberts
Senior Planner, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
916-445-0613 FAX 916-323-3018 WWW.OPR.CA.GOV/CLEARINGHOUSE.HTML

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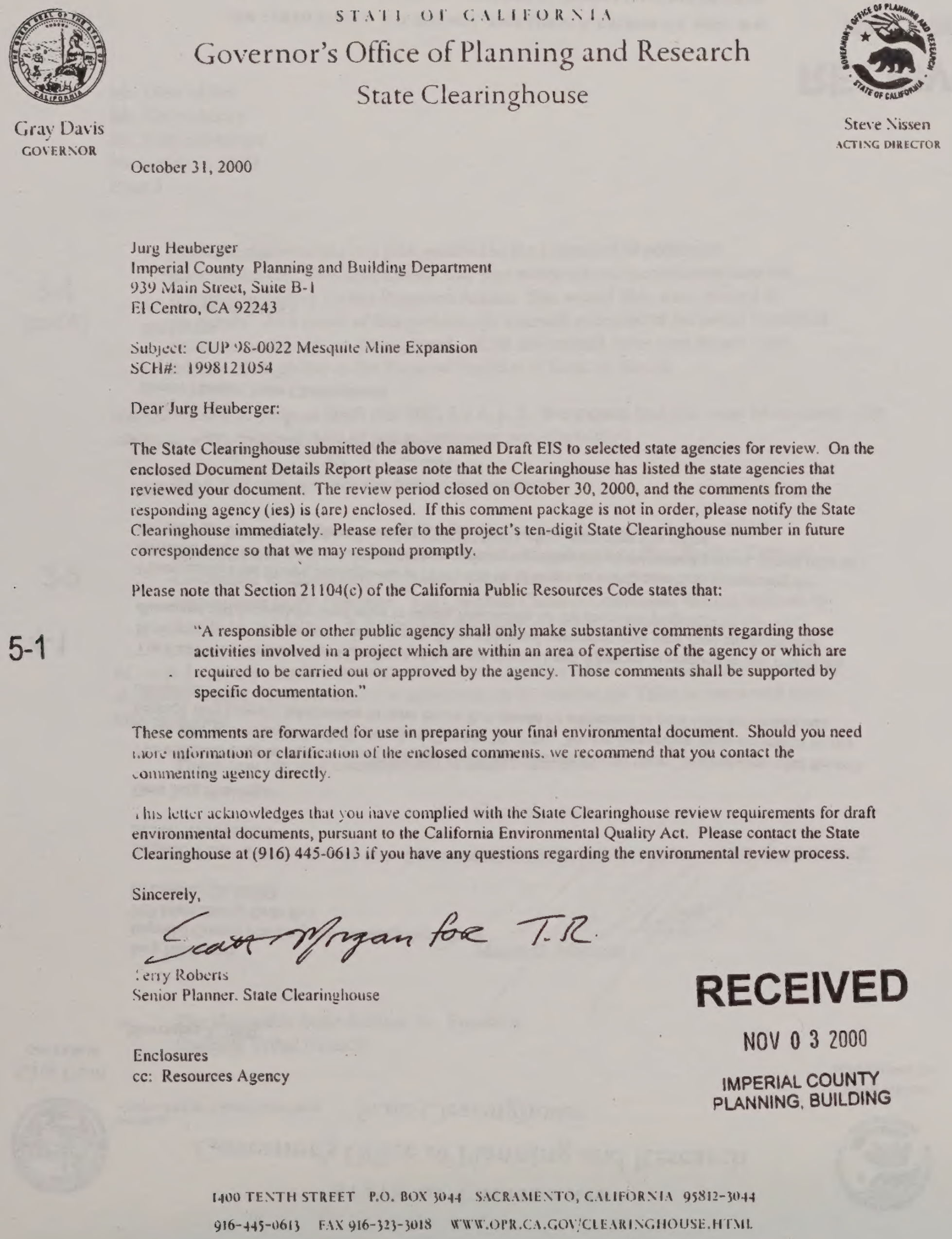
RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA STATE CLEARINGHOUSE, SIGNED BY TERRY ROBERTS, DATED NOV. 7, 2000

Response to Comment 4-1:
Confirmation of DEIR/EIS receipt letter. No response is required.



STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse

Gray Davis
GOVERNOR

Steve Nissen
ACTING DIRECTOR

October 31, 2000

Jurg Heuberger
Imperial County Planning and Building Department
939 Main Street, Suite B-1
El Centro, CA 92243

Subject: CUP 98-0022 Mesquite Mine Expansion
SCH#: 1998121054

Dear Jurg Heuberger:

The State Clearinghouse submitted the above named Draft EIS to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on October 30, 2000, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

5-1

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan for T.R.

Terry Roberts
Senior Planner, State Clearinghouse

Enclosures
cc: Resources Agency

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RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA STATE CLEARINGHOUSE, SIGNED BY SCOTT MORGAN, DATED OCTOBER 31, 2000

Response to Comment 5-1:

Acknowledgement of compliance with review requirements. No response is required.

Document Details Report
State Clearinghouse Data Bas

SCH# 1998121054
Project Title CUP 98-0022 Mesquite Mine Expansion
Lead Agency Imperial County

Type EIS Draft EIS

Description Proposed expansion of existing gold mine encompassing nearly 700 acres of which 190 acres require new permit.

Lead Agency Contact

Name Jurg Heuberger
Agency Imperial County Planning and Building Department
Phone (760) 482-4236 Ext 4310 ***Fax***
email
Address 939 Main Street, Suite B-1
City El Centro ***State*** CA ***Zip*** 92243

Project Location

County Imperial
City Brawley
Region
Cross Streets
Parcel No. 739-330-02-01
Township 13 ***Range*** 19 ***Section*** ***Base*** SBB&M

Proximity to:

Highways 78
Airports
Railways
Waterways
Schools
Land Use Special purpose designation in General Plan / Zoned M-3 (Heavy Industrial)

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Public Services; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects; Recreation/Parks

---

Reviewing Agencies Resources Agency; Department of Conservation; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 11; Native American Heritage Commission; State Lands Commission; Department of Fish and Game, Region 6; Regional Water Quality Control Board, Region 7; Integrated Waste Management Board; Department of Toxic Substances Control; Air Resources Board, Major Industrial Projects

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Date Received 08/28/2000 ***Start of Review*** 08/28/2000 ***End of Review*** 10/30/2000

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Note: Blanks in data fields result from insufficient information provided by lead agency.

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Steve Nissen
ACTING DIRECTOR

ACKNOWLEDGEMENT OF RECEIPT

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DATE: September 6, 2000

TO: Jurg Heuberger
Imperial County Planning and Building Department
939 Main Street, Suite B-1
El Centro, CA 92243

RE: CUP 98-0022 Mesquite Mine Expansion
SCH#: 1998121054

This is to acknowledge that the State Clearinghouse has received your environmental document for state review. The review period assigned by the State Clearinghouse is:

Review Start Date: August 28, 2000
Review End Date: October 11, 2000

We have distributed your document to the following agencies and departments:

Air Resources Board, Transportation Projects
California Coastal Commission
California Highway Patrol
6-1 Caltrans, District 11
Caltrans, Division of Aeronautics
Department of Conservation
Department of Fish and Game, Region 5
Department of Parks and Recreation
Department of Water Resources
Native American Heritage Commission
Office of Historic Preservation
Public Utilities Commission
Regional Water Quality Control Board, Region 9
Resources Agency

The State Clearinghouse will provide a closing letter with any state agency comments to your attention on the date following the close of the review period.

Thank you for your participation in the State Clearinghouse review process.

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
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RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA STATE CLEARINGHOUSE, DATED SEPTEMBER 6, 2000

Response to Comment 6-1:
Received list of agencies to receive DEIR. No response is required.

Document Details Report
State Clearinghouse Data Bas

SCH# 1998121054
Project Title CUP 98-0022 Mesquite Mine Expansion
Lead Agency Imperial County

Type EIS Draft EIS
Description Proposed expansion of existing gold mine encompassing nearly 700 acres of which 190 acres require new permit.

Lead Agency Contact
Name Jurg Heuberger
Agency Imperial County Planning and Building Department
Phone (760) 482-4236 Ext 4310 **Fax**
email
Address 939 Main Street, Suite B-1
City El Centro **State** CA **Zip** 92243

Project Location
County Imperial
City Brawley
Region
Cross Streets
Parcel No. 739-330-02-01
Township 13 **Range** 19 **Section** **Base** SBB&M

Proximity to:
Highways 78
Airports
Railways
Waterways
Schools
Land Use Special purpose designation in General Plan / Zoned M-3 (Heavy Industrial)

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Public Services; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects; Recreation/Parks

Reviewing Agencies Resources Agency; Department of Conservation; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 11; Native American Heritage Commission; State Lands Commission; Department of Fish and Game, Region 6; Regional Water Quality Control Board, Region 7; Integrated Waste Management Board; Department of Toxic Substances Control; Air Resources Board, Major Industrial Projects

Date Received 08/28/2000 **Start of Review** 08/28/2000 **End of Review** 10/30/2000

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STATE OF CALIFORNIA - BUSINESS, TRANSPORTATION AND HOUSING AGENCY
GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 11
P.O. BOX 85406, M.S. 50
SAN DIEGO, CA 92186-5406
PHONE: (619) 688-6954
FAX: (619) 688-4299

Clear
CLS 10/30/2000

11-IMP-078
P.M. 44.5
(K.P. 71.6)

September 15, 2000

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SEP 21 2000
STATE CLEARINGHOUSE

Mr. Scott Morgan
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Dear Mr. Morgan:

Draft EIR/EIS for the Mesquite Mine Expansion – SCH 1998121054

Caltrans District 11 comments are as follows:

7-1
- Due to the expected increase in the discharge rate, we recommend the existing erosion protection be extended 60 feet (18.3 meters) on both sides of State Route 78 (SR-78) as it traverses the swale.

7-2
- Any work performed within Caltrans' right of way will require an encroachment permit. For those portions of the project within the Caltrans' right of way the permit application must be stated in both English and Metric units (English first, with Metric in parentheses). Information regarding encroachment permits may be obtained by contacting our Permit Office at 619-688-6158. Early coordination with our agency is strongly advised for all encroachment permits.

Our contact person for SR-78 is Henry Morris, Route Manager, at 619-688-6881.

Sincerely,

Bill Figge

BILL FIGGE, Chief
Development Review and Public Transportation Branch

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RESPONSE TO COMMENT LETTER FROM CALIFORNIA DEPARTMENT OF TRANSPORTATION, SIGNED BY BILL FIGGE, DATED SEPTEMBER 15, 2000

Response to Comment 7-1:

The expected increase in the discharge rate at the SR-78 swale is the result of alterations in the surface flow regime due the construction of the North Extension diversion channel. Prior to initiation of the channel construction, Newmont will present to Caltrans engineered drawings showing proposed extensions of existing erosion protection features for 60 feet (18.3 meters) on both sides of Highway 78 (SR-78) as it traverses the swale. Upon approval of the engineering design by Caltrans, Newmont shall facilitate installation of the erosion protection features.

Response to Comment 7-2:

Newmont will obtain an encroachment permit prior to conducting any activities within the Caltrans right-of-way.

State of California

MEMORANDUM

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The Resources Agency

To: Project Coordinator
Resources Agency

Mr. Jurg Heuberger, Director
Imperial County Planning and Building Department
939 Main Street, Suite B-1
El Centro, CA 92243

Date: October 30, 2000

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Clear
10.30.00
(2)

From: **Department of Conservation**
Office of Governmental and Environmental Relations

Subject: Draft Environmental Impact Report/Statement (DEIR/S) for the Mesquite Mine Expansion – **SCH #98121054** (BLM No. 40204)

The Department of Conservation's Office of Mine Reclamation (Office) has reviewed the DEIR/S for the Mesquite Mine Expansion project. The Office has statewide responsibility for the administration of the 1975 Surface Mining and Reclamation Act (SMARA). The following mine reclamation comments were prepared by the Office's Catherine Gaggini and Karen Wiese to assist in your review of this project.

8-1 The Mesquite Mine is located approximately 40 miles northeast of the Town of Brawley, off State Highway 78. The project would expand existing open-pit mines, overburden/interburden storage areas and heap leach facilities. The project would also entail the construction of surface-water diversion channels. Finally, the proposed project would reclaim disturbed areas to open-space, wildlife habitat, and pit lakes. OMR previously commented on this project in letters dated October 17, 2000, July 15, 1999, November 3, 1999, and February 2, 1999. In addition, site visits were conducted on April 19, 2000, January 29, 1999, and May 7, 1997.

8-2 The draft EIR/EIS fails to adequately address many of the mandatory requirements of either SMARA or the implementing State Mining and Geology Board regulations (Public Resources Code Section 2710 et seq.; and, the California Code of Regulations (CCR) Title 14, Chapter 8, Article 1, Section 3500 et seq., and Article 9 Section 3700 et seq.). In addition, a majority of the reclamation issues raised during numerous site visits, conference calls between the applicant and concerned agencies, and detailed comment letters, were not treated in the DEIR/S. Extensive staff time has been committed to the development of a sound reclamation plan for this project. To meet the requirements of SMARA and capitalize on the technical resources from several agencies that have been brought to bear on this project, we ask that the following items be addressed in the final DEIR/S.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000

Response to Comment 8-1:

The comment provides a background for the project and the specific comments that follow. No response is requested or required.

Response to Comment 8-2:

This comment presents broad documentation issues, preparatory to specific comments later. We believe, and will show in later responses, that many of the topics that the Department of Conservation letter alludes to are, in fact, addressed within the DEIR/EIS document. Other topics are addressed in the project slope stability report and the 11/99 Plan of Operations (POO).

1. The DEIR/S does not reference the June 1999 reclamation plan for the project,
8-3 nor are the provisions set forth in the reclamation plan included in the DEIR/S.
Because of this, some of the mitigation measures offered in the DEIR/S are at
odds with the draft reclamation plan. In addition, because of the previously
cited inadequacies of ongoing technical studies, and/or of studies subsequent to
the 1999 reclamation plan, potential environmental impacts of the proposed
8-4 project have not been adequately described or addressed in the DEIR/S (see
our October 17, 2000 letter, attached).

For example, the DEIR/S proposes to mitigate the project's ecological risk to flora
and fauna from contaminated pit lake water by constructing steep walls at the pit
water line to prevent plant establishment and, therefore, uptake of toxic chemicals
by plants and animals. There are two apparent reasons why this mitigation is
8-5 inadequate. First, the final pit configuration is not known at present (see our
attached October 17, 2000 letter). The long-term stability of the final pit
configuration is greatly dependent on the pit slope design. It is unlikely that long-term stability can be accomplished without backfilling the pits, buttressing the toes
of the pit slopes, or laying the final slopes back to a gentler angle than the
proposed mined slopes. Secondly, the ultimate elevation of water in the pits is
not understood at this time, nor is it understood when the pit lakes will equilibrate.
According to the DEIR/S, "...the individual pits are expected to reach their
equilibrium level within times ranging from several years to several decades,
8-6 depending upon the configuration of each pit. The depths of the lakes will vary
from pit to pit, and may be shallow to relatively deep (i.e., depths may vary from
on the order of ten feet to more than 100 feet)." In summary, the final pit
configuration, and subsequent establishment of vegetation, is not known at this
time. Without an adequate slope stability analysis it is not possible to design the
8-7 measure proposed to mitigate the risk to the biological resources with any
confidence of success.

8-8 2. The DEIR/S must identify the entities that will be responsible for the maintenance
and monitoring of the slopes and lakeshores in perpetuity.

3. In order to be factual, the second to the last paragraph on page 4.1.3-10 should
be changed to read, "In summary, four chemicals of concern (boron, silver, and
8-9 fluoride) present potential future risk to the site receptors from the drinking water
exposure pathway, particularly without the total backfill option."

4. The DEIR/S discusses potential impacts to mine facilities from earthquakes, and
8-10 notes that earthquakes will exacerbate existing slope instabilities at the mine.
However, the main causes for slope failures at this mine are not addressed in

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-3:

The DEIR/EIS references the 11/99 Reclamation Plan revisions on p. 2-20 and approved Reclamation Plan. The 6/99 Reclamation Plan has been superseded by the 10/01 version. The Reclamation Plan has been revised by the Applicant in consultation with applicable Resource Agencies. It represents new mitigation measures, and as such does not constitute "new information" under the provisions of CEQA or NEPA.

Response to Comment 8-4:

The Department's 10/17/00 letter indicates that there are several technical disagreements between the Department and the Applicant and their consultants regarding appropriate parameters needed to ensure slope stability. There is no disagreement that stable slope configurations are required. Since publication of the DEIR/EIS, intensive discussions have take place between the Applicant, OMR, Imperial County and BLM representatives. OMR has accepted an Applicant proposal to stabilize pit slopes through the use of buttresses along the toe of pit slopes. The slope stabilization measures are described in Table 5 of *Report to Newmont Gold Company Mesquite Mine Re Short Term Pit Slopes and Cessation of Mining Pit Slopes,* July, 2000. An addendum has been added to the site reclamation plan to include the placement of the toe buttresses. The addendum includes cost calculations that will be used to establish bonding for pit stabilization measures.

Response to Comment 8-5:

The comment states that proposed measures to mitigate the potential risk from the dietary pathway are inadequate due, in part, to an unknown final pit design and an inadequate slope stability study. The plan includes slope stabilization measures to increase long term pit slope stability. The measures rely predominantly on buttressing of the toes of pit slope to increase the factor of safety to acceptable levels. The reclamation cost calculations includes funds for placement of these slope stabilization measures. The study includes design criteria for pit slopes based on the current pit design. It is anticipated that this is the design that will be used for mine expansion development.

A slope stability report: *Report to Newmont Gold Company Mesquite Mine Re Short Term Pit Slopes and Cessation of Mining Pit Slopes,* July, 2000 was prepared by Charles Brawner, a Professional Engineer (PE). The report incorporated data from strength testing conducted by Shephard Miller, Inc. and slope stability analysis conducted by AGRA Earth and Environmental. The final report and associated data was reviewed by Dr. Lawrence A. Hansen, California Professional Geotechnical Engineer (#2020), AGRA Earth and Environmental, who also visited the Mesquite site with Mr. Brawner to observe the existing slopes and confer with on-site mining engineers. Dr. Lawrence prepared a letter indicating agreement with the analysis, conclusions and recommendations of the Brawner Report. The letter of concurrence, bearing the California PE seal was submitted to OMR and County of Imperial with the Brawner report. Copies of two Hansen letters relating to the stability analysis are provided on the following pages.

AGRA
ENGINEERING GLOBAL SOLUTIONS

AGRA Earth & Environmental Inc.
3232 West Virginia Avenue
Phoenix, Arizona 85009
Tel (602) 272-6848
Fax (602) 272-7239
Toll Free 1-800-248-AGRA

July 14, 2000
AGRA Job No. 0-117-001057
Letter No. 2

Newmont Gold Company
6502 East Highway 78
Brawley, California 92227-9306

Attention: **Mr. Dale A. Loucks**
Chief Engineer

Gentlemen:

RE: REPORT REVIEW
SHORT-TERM PIT SLOPES AND
CESSATION OF MINING PIT SLOPES
MESQUITE MINE

As requested, AGRA Earth & Environmental, Inc. (AGRA) has completed a review of studies addressing the design and development of pit slopes for Newmont Gold Company's Mesquite Mine located near Brawley, California. The studies addressed requirements for both short-term stability and stability at cessation of mining.

The report prepared by Brawner Engineering, Ltd. ("Report to Newmont Gold Company, Mesquite Mine RE: Short Term Pit Slopes and Cessation of Mining Pit Slopes", dated July 11, 2000) was reviewed, and the undersigned discussed aspects of the project with C. O. Brawner, P.Eng., the author of the report. A site visit was made by the undersigned and Mr. Brawner on June 1, 2000, at which time the slopes the studies address were observed, and the future development of the pits and slope monitoring were discussed with Mr. Dale A. Loucks, Chief Engineer.

AGRA agrees with the analyses, conclusions and recommendations presented by Brawner Engineering, Ltd. concerning the future extensions of the Mesquite Mine pits, in particular the southeast extension of the Rainbow Pit. The undersigned is in agreement with the general design philosophy presented, which is to continue the observational approach in the short-term to establish parameters for design of pit slopes for cessation of mining.

The alternatives for providing pit slopes that meet long-term design safety factor requirements are appropriate, including flattening the slope, constructing a berm at the toe of the slope or constructing a bench at the crest of the slope. The alternatives that are presented in the report for Rainbow Pit extension and the other slopes provide Newmont Mining Corporation the criteria necessary for planning the future expansions.

Finally, the undersigned is in agreement with the elements of the program recommended to maintain safe conditions during the interim mining period. These should be strictly adhered to in order to prevent unsafe conditions developing.

Should you have any questions concerning this letter report, please do not hesitate in contacting the undersigned.

Respectfully submitted,

AGRA Earth & Environmental, Inc.

LAHansen

Lawrence A. Hansen, Ph.D., P.E.
Senior Vice President

No. GE 2020
Exp. 3/31/03

c: Addressee (2)
Brawner Engineering, Ltd.
Attn: C. O. Brawner, P. Eng. (1)

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amec

18 January, 2001
AMEC Job No. 0-117-001057

Mr. Dale A. Loucks
Chief Engineer
Newmont Mining Corporation
6502 East Highway 78
Brawley, California 92227-9306

Dear Mr. Loucks:

Re: Slope Angles
Pre- and Post-Closure
Mesquite Mine

AMEC Earth & Environmental, Inc. (AMEC) is in receipt of review comments from the State of California, Department of Conservation (DOC) concerning the report submitted by Brawner Engineering, Ltd. (Brawner). The report addressed the mine pit slopes at the Mesquite Mine, in particular the requirements for both short-term stability and stability at the cessation of mining. The undersigned has previously visited the Mesquite Mine to observe the existing mine pit slopes, and has reviewed the Brawner report. A letter (dated July 14, 2000) indicating the concurrence of the undersigned with the findings and conclusions of the report was submitted to Newmont Mining Corporation. This letter responds to several of the review comments presented in the DOC correspondence.

The DOC letter states that the use of static and pseudo-static factors of safety of 1.3 and 1.0, respectively, is "incorrect", referencing Special Publication 117, "Guidelines for Evaluating and Mitigating Seismic Hazards in California" (State of California, Department of Conservation, Division of Mines and Geology, 1997). Instead, the letter states that static and pseudo-static factors of safety of 1.5 and 1.1, respectively, are applicable. However, this publication is not applicable to either the short-term operations or the cessation of mining at the Mesquite Mine because the publication specifically addresses projects defined "as any structures for human occupancy, or any subdivision of land which contemplates the eventual construction of structures for human occupancy". Table 1 in the publication further defines the types of projects to which the guidelines apply. It is apparent that the pit slopes at the Mesquite Mine are not "structures for human occupancy", nor will the eventual use of the mine pits include "structures for human occupancy".

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It is standard practice in the mining industry to utilize relatively steep mine pit slopes, recognizing that movement of the slopes will occur. However, such movements do not result in damage to or interfere with the operation of the mine pits. This, of course, would not be the case if the slopes were supporting "structures for human occupancy." It should also be noted that static and pseudo-static safety factors of 1.5 and 1.1, respectively, as recommended in Special Publication 117, were used in developing the design for the East Rainbow pit extension that will be adjacent to the highway. Though not technically a structure for human occupancy, failure of this slope possibly could have an impact on public health and safety, and its design was developed using the more conservative factors of safety. Other slopes, which do not have the same potential for impacting public health and safety, were designed with a somewhat lower factor of safety. The post-closure slopes, following implementation of the slope stabilization measures outlined in the Brawner report, result in minimum static and pseudo-static factors of safety of 1.4 and 1.0, respectively. Considering the location of the Mesquite Mine and the likely ultimate end use of the property, this is considered acceptable.

The DOC letter states that the report "must provide the seismic coefficient used for the analysis", and further states that a value of 0.15 typically is used in California. As indicated in Table 2 of the report, a seismic coefficient of 0.2 was used in the slope stability analyses, which is more conservative than the typical value of 0.15. Had a value of 0.15 been used, the resulting pseudo-static factors of safety would have been higher, likely approaching or exceeding the 1.1 value which the DOC states is applicable.

As a general comment on computed factors of safety, any stability analysis is very dependent on the strength parameters used in the analysis. In the Brawner report, strength parameters for the dominant lithologies encountered in the pit slopes were determined through laboratory testing of drill core samples. These data were incorporated with observational data on the performance of the existing pit slopes to establish the appropriate strength parameters to be used for both moist (or dry) and saturated conditions. At the Mesquite Mine, many years of observing the performance of the slopes have generated very useful data concerning the shear strength of the geologic materials being excavated. This data typically has been used to verify the range in strength parameters used in stability analyses.

The DOC letter requests clarification on how blasting vibrations compare to seismic vibrations, and also notes that "The appropriateness of using short duration vibrations from blasting in pseudo–static slope stability analysis has not been demonstrated." Blasting to break rock has been conducted within the Mesquite Mine pits for many years, again resulting in a body of empirical data that demonstrates the impact of blasting on the pit slopes. If the blasting does not result in significant movement, then it can be concluded that the pseudo-static factor of safety is at least 1.0. Typically, the frequencies of vibrations produced by blasting are considerably higher than the frequencies of vibrations produced by earthquakes. Thus, for the same peak particle velocity, the acceleration component of the blasting time-history record is larger when compared to the acceleration component of the earthquake time-history record; but the displacement component is smaller. For the same or comparable acceleration values; the displacement values resultant of blasting are considerably smaller than those resultant of an earthquake.

Should you have any questions concerning the above responses to comments from the DOC, please do not hesitate in contacting the undersigned.

Respectfully submitted,

AMEC Earth & Environmental, Inc.

Lawrence A. Hansen, Ph.D., P.E.
Senior Vice President

REGISTERED PROFESSIONAL ENGINEER
LAWRENCE A. HANSEN
No. GE 2020
Exp. 3/31/03
GEOTECHNICAL
STATE OF CALIFORNIA

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c: Addressee (2)
Brawner Engineering, Ltd.
Attn: C. O. Brawner, P. Eng. (1)

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-6:

The referenced statement in the DEIR/DEIS does not allude to the degree of uncertainty in the pit lake modeling. The statement describes the variation in the time for the four pit lakes to reach an ultimate elevation and the variation in the resulting lake depths. The predicted near steady-state pit lake elevations and lake filling times for each pit are presented in Section 3.3.1 (Hydrologic Conditions) and Table 3.2 of the Hydrologic and Geochemical Study Report for the Proposed Mesquite Mine Expansion (BCI, 1999). The determination of these future lake characteristics is based on generally accepted water balance considerations.

Response to Comment 8-7:

Please see Response to Comment 8-4. The mitigation measure that is referred to, that the pit walls will be as steep as possible at, above, and below the projected long-term pit lake elevation in order to minimize potential plant uptake of water pollutants and subsequent ingestion by wildlife, is a performance criterion. Pit walls along the pit lakes margins will be designed at a slope of 1:1 or greater. The objective is to eliminate a shallow "littoral shelf" zone along the perimeters of the lakes that would be amenable to plant growth.

Response to Comment 8-8:

Maintenance would continue to be the responsibility of the Mine operator through completion of reclamation, with monitoring during that period to be shared by BLM, the County of Imperial, and California State Lands Commission (if their lands are utilized for the expanded Mine). After completion of reclamation, maintenance and monitoring would be the responsibility of the land owner or manager, as it is for all other lands.

Response to Comment 8-9:

The referenced citation from Page 4.1.3-10 is correct as written in the DEIR/EIS.

For purposes of the pit lake modeling and the subsequent Ecological Risk Assessment, two options were evaluated, the open pit option and the backfill option. The open pit option essentially encompasses the two project alternatives evaluated in the DEIR/EIS (Proposed Action, Reduced Footprint Alternative). Since the pit lakes would develop regardless of whether the mine expansion would proceed, the open pit modeling exercise also would be representative of the no action alternative evaluated in the DEIR/EIS. The Backfill Option assumes that virtually all of the overburden/interburden generated during the mine expansion would be placed in the pits rather than in out-of-pit OISA's. The backfill alternative would not result in total backfilling of the pits nor would it result in the elimination of the pit lakes. Due to the chemical interaction between the backfilled overburden/interburden and pit lake water; however, the backfill alternative would have negative implications for the ultimate equilibrium chemistry of the pit lakes.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-9: (continued)

As indicated, four COCs (boron, selenium, silver and fluoride) may present future risk to site receptors through the drinking water pathway. The degree of risk increases with the backfill option (described above) due to the rock-water interaction. In both cases, however, high salinities of the pit water would result in limited use by site receptors.

Response to Comment 8-10:

Please see response to Comment 8-4. We understand the slope toe buttressing plan has been accepted by OMR.

8-10 (cont'd.) the DEIR/S or the project's July 2000 slope stability report (see October 17, 2000 letter, attached). Pit slope failures are ongoing occurrences at the mine site, independent of earthquakes. Failures of the pit slopes are due to the relative weakness of the bedrock and the steep angle of operational slopes. The ongoing slope failures and long-term stability of the final slopes should be given thorough treatment in the final EIR/S.

5. Pit berms are proposed to prevent access to the pits by the public. The relative location of the berms to the open pit is not specified. Given the current slope conditions and the uncertainty of the final slope configuration, the potential for future failures of the pit walls remains a concern. Therefore, the location of the berms should be specified in the DEIR/S. The berms should be located for long-term service; berms located too close to the pit walls run the risk of sliding into the pits. In addition, the tension cracks associated with the slope instabilities at Mesquite present a real danger to the public. Some of these tension cracks (that occur at the top of the pit slope) are wide and deep enough to entrap animals and off-road vehicles. The berms should be located far enough away from the pit walls to prevent traffic where these tension cracks have the potential to occur. 8-11

6. The majority of our comments on the Notice of Preparation for the DEIR/S (see February 2, 1999 letter, attached) are not addressed by the chapters or appendices that were referenced in the Summary of the NOP Responses. For example, our slope stability comments are reported as addressed in DEIR/S Appendix B. However, Appendix B is the Vegetation Baseline Survey for the Mesquite Mine Project and does not deal with slope stability. Also, as discussed above, potential impacts on the final reclamation of the mined pit slopes (final slopes) have not been addressed in the DEIR/S. Response comments 11-20 state that these issues are addressed in Appendix B. Yet, Appendix B does not address mine slope stability, which remains an outstanding issue with regard to compliance with SMARA and the CCR, as well. 8-12, 8-13

7. The DEIR/S should discuss the ultimate disposition of the East Rainbow, North Extension and the Vista Diversion Channels. Specifically, the DEIR/S should discuss the reclamation and maintenance of these structures. Also, a monitoring method with success criteria to ensure that no adverse impacts occur to the downstream riparian corridors should be proposed. 8-14

8. In Section 4.1.3-25 (Plant Species Mitigation), the DEIR/S states that "[w]here applicable, disturbed areas will be scarified...." In the same section, the DEIR/S suggests that "[t]o the extent possible, micro-catcments could be installed...." 8-15

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-11:

At the end of mining, berms will be installed around the pits to limit public access. Berms will typically be installed 30 to 300 feet back from the pit crest. With the proposed slope stabilization measures, long term slopes will have factors of safety adequate for long term stability. In addition to the berms, public access into the area will be greatly limited by removal of roads and the rough, post-reclamation topography.

Response to Comment 8-12:

The comments are correct. There was an oversight in the Summary of NOP Responses table. The reference to Appendix B in those responses to DOC/OMR was supposed to be "Appendix B of the 11/99 Plan of Operations." That Appendix contains the Reclamation Plan, and on page B-27, a discussion of pit slope stability issues. The discussion references the June 1999 report by Brawner Engineering, "Report to Newmont Gold Co. Mesquite Mine, Re: Pit Slope Design and Development." That document is also listed in the DEIR/EIS references, on p. 8-2, and OMR personnel were provided with a copy for review. We understand OMR has agreed to the slope toe buttressing plan. Please see Response to Comment 8-4.

Response to Comment 8-13:

Please see the Responses to Comment 8-4 and 8-12.

Response to Comment 8-14:

One of the primary reclamation goals for the Mesquite Expansion Project is the reestablishment of microphyll woodland habitat along the wash diversion channels, which will divert existing washes around areas of mine activities. The Reclamation Plan for the Expansion Project has been recently revised (October 2001) to include a detailed description of the methods and techniques for wash revegetation.

The North Extension/Vista diversion and the East Rainbow diversion channels are designed to accommodate flows of a 500-year, 24-hour rainfall event. The design has been verified through hydrologic/hydraulic analysis (Hanson, 1998). The basic cross sectional design of the channels used in the analysis is indicated below:

	North Extension/Vista Diversion	*East Rainbow Diversion*
Bottom Width	40 feet	20 feet
Side Slopes	2:1	2:1
Minimum Depth	10 feet	10 feet
Channel Slope	0.005	0.008

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-14: (continued)

The diversion channels will convey water back into existing drainage channels south of the Mesquite mine site. Existing washes that convey storm waters around or through the project area without impacting project facilities will not be altered.

These diversion channels will be constructed to approximate the gradient and channel geometry of the original drainage system. Construction of all diversion channels will include concurrent wash habitat reclamation. This reclamation will include immediate relocating of existing wash soils and microphyll habitat shrubs and trees from areas to be disturbed to the diversion channel benches.

Wash habitat reclamation will be conducted immediately after diversion channel construction. The basic reclamation approach for wash revegetation is to revegetate disturbed areas using native plant species endemic to the area in order to establish a stable productive biotic capable of self regeneration without dependency on long term maintenance, soil amendments, or fertilizers.

These procedures include:

- Construct diversion channels with adequate dimensions to accommodate the design flows, but with incorporated topographic features to facilitate reestablishment of the wash vegetation. These features would include flat benches along the stream banks. Stream banks and accompanying benches will be the focus of wash habitat revegetation.
- Salvage wash soils from areas that will be disturbed as part of mining and use the soils as a top dressing along channel banks and benches. Salvaged soil will provide a ready seed source for revegetation.
- Utilize grading techniques along stream banks and benches to enhance water catchment. Construction of microcatchments for water harvest has proven effective at promoting germination and plant growth. Transplant displaced ocotillo and cacti into catchment basins.
- Seed prepared channel banks and benches with a locally collected seed mix.
- Plant and transplant young ironwood (*Olneya tesota*) and palo verde (*Cercidium floridum*) trees or seedlings along the channels to reestablish the microphyll woodland. Planting and transplanting of trees will occur in designated transplant plots along the course of the diversion channel. These plots will ultimately provide a source of seed to further the reestablishment of microphyll vegetation along the channels. In addition to the planting and transplanting program. Ironwood germination and survival will be tested using scarified ironwood seeds from the existing seed bank. These seeds will be planted into prepared sites immediately after a soaking late summer rainstorm to simulate natural seeding. Large numbers of seeds will be planted to insure some survival.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-14: (continued)

Channel and Bank Configuration and Construction: The diversion channels will be constructed concurrently with the initiation of downstream mining activities. Grading within the excavated channel will simulate the natural wash topography that affects drainage, water balance, and surface stability. The size and shape of channel, bank, and bench formation permit the wash habitat to be reclaimed to productive ecosystem. Banks will be constructed with an elevation about 3-4 feet above the adjacent channel. The channels will be constructed with a bank sinuosity that will appear natural to the channel pattern on the site. Straight engineered-looking drainage configurations will be avoided.

Grading for Topography and Water Enhancement: Within the channel, banks and benches will be gradedto form moisture enhancement basins that have proven successful in revegetation testing. These basins will vary in size and placement depending on location within the configured drainage system. Typically, the catchment basins will have a depth of 1-2 feet and a distribution of approximately 10 basins per acre. Channels will be left with natural appearing pockets and sandbars for placement of coarse growth material salvaged from washes that will be disturbed by diversion channel construction. Benches will have irregular basins oriented along the gradient. Banks will have oval or oblong basins on steep slopes of a size sufficient to be stable for the duration of the revegetation effort, and stable in the long-term.

The surfaces along diversion channels will be left rough for a natural appearance and to enhance seed germination and moisture retention. Compacted surfaces from equipment will be roughened prior to placement of salvaged soil or contouring for water enhancement.

Soil Salvage and Placement: Once all construction activity within a diversion channel has been completed, stockpiled soil from disturbed washes will be spread along diversion channel, benches, and banks. The salvaged surface soils will be spread on the diversion channel benches, banks and on islands in channels as a source of seed and to facilitate restoration of the soil substrate for revegetation. Monitoring of revegetation and testing have shown excellent germination of seed from salvaged soils (pers. comm., Bamberg, 2001.). The salvaged soils will be applied as a top-dressing usually less than 2 inches thick.

Revegetation will establish a pattern and density of trees and shrubs that simulate the natural wash vegetation. In addition, soil application and seeding will provide seeds of not only trees and shrubs, but also annual and perennial forbs species. Annual and perennial forbs are important forage for wildlife in years of normal or abundant rainfall.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-14: (continued)

Seed Selection, Handling, and Sowing: Seed will be available from three sources: 1) salvaged soil with natural seed banks, 2) current year seeds wind blown into piles, and 3) seed hand collected from specific species such as ironwood.

Specific species will be hand collected directly from plants. Species selection will concentrate on ironwood and palo verde, the two dominant tree species. A bank of ironwood seeds has been previously collected during a past year of unusually abundant seed set on local trees. These seeds have been properly stored in sealed containers and will be used as a seed source during wash reclamation. Another specific plant species to be collected will be fairy duster (*Calliandra eriophylla*). Mitigation for the Mesquite Mine expansion requires a 1:1 replacement of fairy duster plants that will be destroyed as part of the expansion. This mitigation will be accomplished, in part, through transplantation of suitable plants and germinating fairy duster from seed. Fairy duster plants will be germinated in tubes from seed collected in the nearby area. Seedlings will then be transplanted to suitable sites (shallow sandy washes) on the mine areas.

Seeds will be collected in bulk from surfaces such as washes and depressions, and underneath shrubs where strong winds blow seeds into windrows. Seed collected in the washes have a mixture of species, both perennial and annual, common to the wash vegetation. This source of seed is available throughout the year following years of moderate or good rainfall. Bulk seed collection from soil surfaces will either be sown immediately without storage, or stored dry in plastic bags. Hand collected seed from plants will be fumigated and stored dry in plastic bags or containers, or frozen if insect infestation is a problem.

The hand-collected seeds from specific species will be sown directly into the bottom of catchment basins and allowed to germinate naturally. The seed collected in surface plant litter will be sown in bulk by hand broadcasting on benches and banks throughout the diversion channels. After the initial seeding program, additional seeding will be conducted, as necessary, during the life of the project to ensure that success criteria are attained. No long term watering is planned for the seeded areas. Utilizing mine-watering equipment, seeded areas may be sprinkled with water once or twice only to encourage germination.

Transplant and Propagation Methods: The channel benches, slopes and banks will be planted with suitable specimens of wash vegetation species directly transplanted from other disturbed drainages. In addition, young ironwood and palo verde seedlings will be purchased and planted in vegetation islands along the course of the diversions. Transplanting will begin to reestablish microphyll woodland habitat sooner than can be accomplished by seeding alone.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-14: (continued)

Reclamation will include the immediate relocation and transplantation of displaced microphyll habitat shrubs and trees to the diversion channel benches and banks. The following procedures are the general sequence for transplanting:

1. Select young healthy ironwood, palo verde trees and wash habitat shrubs and cactus for transplanting. Plants should be excavated with sufficient root/stem (generally a ration of about 4:1) biomass. Plants may be trimmed to achieve this root/stem ratio. Trees to be transplanted will be approximately no greater than 8 feet in height and/or shall have a trunk diameter no greater than 3 inches.
2. Excavate the plant and as much soil around the plant as possible to preserve root material using a large backhoe and truck. Transport specimen to prepared diversion channel area and plant immediately.
3. Place the transplant specimen in prepared hole that has been saturated with water, arrange roots for maximum spread, carefully shovel in soil and lightly tamp area around plant to collapse large air spaces.
4. Water twice after transplanting to saturate the soil; the first watering will be immediately after transplanting and the second watering will be approximately three (3) hours later. Transplants will have additional periodic watering to ensure transplant success (approximately five gallons per plant for each watering). Additional watering is expected to occur periodically for approximately two years, after which no supplemental watering will be applied.

Ironwood and palo verde seedlings will be purchased and transplanted into selected islands of vegetation along the course of the diversions. Transplanting and watering methods will be similar to that described above. Wire cages will be placed around the new transplants to minimize herbivory.

The baseline surveys indicated that the distribution of trees and shrubs in terms of spacing, density and species composition, is quite variable within the natural washes. Certain wash transects had no trees, and some benches and broad washes had overlapping canopies of trees. Clumping transplanted trees in favorable locations such as bends where water will collect will simulate this linear variable density of trees. Once established, these islands of trees will provide a seed source for downstream areas.

Monitoring is required for determining revegetation success and for assessing remediation needs. It is anticipated that revegetation monitoring will be conducted for a minimum of 5 years following revegetation activities. For purposes of reclamation cost estimates, a ten-year monitoring period was assumed.

Response to Comment 8-14: (continued)

Monitoring Procedures: Standard quantitative vegetation techniques will be used. Vegetation variables will be sampled along multiple transects at each wash site, as well as downstream. Transects will be comprised of linear plots perpendicular to the washes. Each transect will include both banks of the reclaimed wash. The number and dimensions of the plots will depend on the width of the wash reach at each site. All vegetation variables and site descriptions will be recorded on standardized field data forms. Vegetation at each transect wash site will be characterized by:

- Percent cover by each plant species
- Total vegetation cover by transect
- Density by plant species
- Plant species diversity.

All plants (shrubs, trees, cacti, and grasses) rooted in a transect will be tallied by species and each individual assigned a cover value, based on visual estimation. In addition the diameter of all shrubs will be recorded. Woodland trees will be measured for width, height, and number of stems.

The cover of each individual plant will be estimated as a percent of the total area in the plot measured. Cover per species will be determined by adding the cover values of all individuals in that species. Total vegetation cover for each transect will be calculated by adding the cover values by all individuals in all plots. Because of vegetation structure and overlap of tree and shrub canopy, this value may occasionally be greater than the actual canopy coverage.

Plant species densities will be calculated by adding the number of individuals of each species in a transect, and adjusting this total to an acre unit (i.e., numbers per acre). Plant species diversity will be determined as the total number of plant species recorded within all transects at each site.

Microphyll Tree Census and Shrub Densities: Ironwood and palo verde are the dominant tree species that characterize the microphyll woodland habitat at the Mesquite Mine. These species will be sampled using a complete census technique. Reaches of all the reclaimed washes will be walked and all individuals of both species tallied by size class. Three size classes in the reclaimed washes will be used:

- Seedlings less than 1 feet tall
- Saplings from 1 to 6 feet tall
- Young trees greater than 6 feet tall.

Numbers of shrub by species will be recorded in each plot along the transect.

Response to Comment 8-14: (continued)

Habitat, Topographic and Hydrologic Analysis: Dimensions across sections of each watercourse reach will be recorded, and roughly drawn for the bank and channel widths. The cross sections will be photographed. Characteristics of the banks and channels for depth and configuration will be noted to determine qualitatively recent flows and storm events. Effects on revegetation efforts and deposition along the washes will be noted.

The structure of the wash habitats will be determined from the quantitative measurement surveys, and from qualitatively noting conditions of plants growth, productivity, death, parasitism, and other utility factors. Evidence of habitats use will be recorded in the form of tracks, cut ends of branches denoting browsing, scat or deer pellets groups, burrows, animal remains, and other signs of use. Species of trees and shrubs browsed will be noted along with other signs of herbivory. Sightings of other animals and bird will be noted for frequency and amounts.

Success will be judged using two vegetation parameters. The standards will be set as a percentage of density and diversity of baseline data from undisturbed washes. Standards for success of the reclaimed washes will be set at 50% of the diversity, and 60% of the perennial density of the undisturbed washes for two consecutive years. The other vegetation parameters of cover by species and total cover will be measured, but not used as criteria for success. Vegetation stability and habitat conditions will be noted for qualitative evaluation only.

Remediation measures for reclamation will be assessed during the monitoring periods. The washes will be subjected to current conditions of weather and climate throughout the life of the mine, and the monitoring periods. Natural water flow in the channels in the case of a major storm will not exceed the design, but may disrupt revegetation efforts. Successful revegetation during reclamation depends to a great extent on favorable weather during the period after transplanting or seeding.

Problems requiring remediation may include:

- Lack of plant germination, survival, and growth
- Erosion of banks or benches that prevent revegetation
- Sedimentation that fill channels and requires restoration of drainage
- Failure to meet revegetation requirements within a reasonable time frame.

Remediation measures to correct potential problems with reclamation may include repair and reconstruction of the drainage channel configuration, regrading for water enhancement, and replanting or reseeding vegetation.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-15

Microcatchments will be created on the top and sides of OISAs, leach pad surfaces, reclaimed facility areas, haul roads, staging areas and other areas with substrate conditions and topography that would be amenable to the water harvest technique. Pit haul roads, pit bottoms and in pit OISA's will also be ripped and graded into microcatchments. These graded areas will be broadcast or aerial seeded with the locally collected seed mix.

Rocky pit slopes will not be microcontoured due to the prevalence of exposed bedrock. As is typical of open pit mining operations, the pits are excavated as a series of layered mine benches. The pit walls reflect this benched configuration, consisting of a series of near vertical rocky cliffs with intervening, flat catch benches. The combination of rocky cliffs and catch benches create the ultimate pit slope. Due to safety considerations, machinery or personnel cannot access these pit slopes. At the conclusion of mining, this benched configuration will remain as a new landform that will in some ways mimic the rocky, high relief areas of the Chocolate Mountains, north of the site. Revegetation of the rocky pit slopes will not be conducted. Experience has shown that some natural revegetation, resulting from windblown seeds and the collection of water along catch benches will occur along the pit slopes. This natural revegetation will be augmented by the aerial application of the locally collected seed mix along the pit perimeters.

Scarifying, as referred to in the text of the DEIR/EIS, refers to shallow ripping (up to 1 foot), typically accomplished with the ripping bar of a grader. It is a form a decompaction. Prior to development of microcatchments and reseedings, disturbed areas will be decompacted. Areas which have undergone a high level of compaction during mining activities, such as haul roads, staging areas and tops of OISAs will require scarifying, as described above, or deeper ripping using a dozer. The text of Section 4.1.3.4, page 4.1.3-26, has been clarified and is included in the Errata section. The performance standard for reclamation is not the number of microcatchments created or acres of decompaction accomplished, but the density, cover and diversity of the resulting vegetation. These performance standards are part of the revised Reclamation Plan. If the measures that the Applicant takes to accomplish reclamation are not effective, and do not meet the applicable density, cover and diversity standards, they will have to keep redoing their work, at considerable cost to them of time and dollars. This is a strong incentive to do the reclamation right from the beginning. Please see Responses to Comment 8-14 and 8-26.

8-15 (cont'd.) The terms "where applicable" and "to the extent possible" are ambiguous and
open to interpretation. Without specific performance standards, the
effectiveness of these measures will be virtually impossible to monitor. Also,
CCR Section 3705(c) **requires** that the site be de-compacted. The DEIR/S
8-16 must disclose areas that will be ripped and de-compacted. Finally, the DEIR/S
must show the location of the proposed catchments.

8-17 9. The DEIR/S states that any fairy duster plants that are lost will be mitigated on a 1:1 basis. The DEIR/S must describe monitoring methods for assessing survival and growth, and develop success criteria to ensure that mitigation measures are effective.

8-18 10. The June 1999 reclamation plan for the project is still in draft form. The reclamation plan must be completed prior to project approval. As of our review of the draft reclamation plan, the following issues remain to be resolved.

8-19 A) **Final pit slope configuration.** Stability of final slopes must be substantiated by an engineering analysis prepared by a California Licensed Professional Engineer or Certified Engineering Geologist (please refer to our October 17, 2000 letter, attached).

8-20 B) **Depiction of areas where soil and growth media will be salvaged.** These areas must be depicted on a map. Additionally, the management of salvage stockpiles should be described in detail.

8-21 C) **Establishing a microphyll woodland community.** Specific practices and materials that will be used to establish and maintain this plant community should identified.

8-22 D) **Test plot establishment.** The treatment of items such as seeding and transplanting methods, irrigation, exotic vegetation prevention, predation, and soil amendment requirements, should be incorporated into test plot trials. The details of test plot implementation, as well as the results of method testing, should be described in the reclamation plan.

8-23 E) **Reclamation of diversion channels, roads and pit bottoms.** Information is provided in the plan indicating that roads will be scarified. However, compacted areas such as roads and stockpile areas must be de-compacted as opposed to simply scarified.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-16:

See Response to Comment 8-15.

Response to Comment 8-17:

As indicated in the DEIR/EIS, fairy duster plants that are lost will be mitigated on a 1:1 basis, either through relocation of existing plants, planting of new plants from collected seeds or through preservation of fairy duster plants located within planned compensation lands. The Biological Report for the project (NECI, 2000) indicates up to 30 individual plants may occur in the expansion areas. Existing fairy duster plants will be censused before disturbance to determine the mitigation quota. The replacement of fairy duster will also be accomplished through transplantation of suitable plants and germinating fairy duster from seed. Fairy duster seeds will be collected in the spring directly from plants in the nearby area and will be germinated in tubes. Seedlings will then be transplanted to suitable sites (shallow sandy washes) on the mine areas.

Monitoring methods for transplants will be to count the plants surviving after transplanting to insure that this replacement quota is attained. The method is a simple count of surviving plants as part of the annual vegetation surveys. The monitoring will continue until success criteria are met for two consecutive years.

A discussion of transplantation, watering and related issues is included in the Response to Comment 8-14.

Response to Comment 8-18:

The Reclamation Plan, and associated conditions, will be completed prior to project approval.

Response to Comment 8-19:

A slope stability study: *Report to Newmont Gold Company Mesquite Mine Re Short Term Pit Slopes and Cessation of Mining Pit Slopes*, July, 2000, prepared by Brawner and Associates, was reviewed by a Dr. Lawrence H. Hansen, AGRA Earth and Environmental, a California Professional Geotechnical Engineer. Dr. Hansen presented documentation that indicated "… agreement with the analysis, conclusions and recommendations presented by Brawner Engineering, Ltd." A letter of review with Dr. Hansen California stamp was forwarded by the County to Department of Conservation - Office of Mine Reclamation.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-20:

The areas for soil salvage are shown in Figures 4-5 to 4-7, and amounts in Table 4-6 of Appendix B to the DEIS/DEIR *[Vegetation Baseline Study, Mesquite Mine Project, Imperial County, California (Bamberg and Hanne, 2000)].* Salvaged soil will not be stockpiled, but used immediately for concurrent reclamation on the operating mine surfaces no longer in use. The discussion of soil salvage in Appendix B has been appended to the Revised Reclamation Plan (August 2001).

Response to Comment 8-21:

Please see Response to Comment 8-14, which is a description of reestablishment of microphyll communities in drainages.

Response to Comment 8-22:

The Mesquite Mine has set up a large-scale revegetation program that incorporates the revegetation experience over the past 10 years at this and two nearby mines. Based on the work done at the Picacho Mine, located 20 miles southeast of the site, it has been demonstrated that microphyll woodland vegetation can be successfully reestablished (Bamberg and Hanne 1997). Experience gained from these several testing programs, and implementation on large scale reclamation are being used and will continued at the Mesquite Mine during the operations period. Testing will also be conducted on the seeding and transplantation of fairy duster plants.

The Mesquite Mine instituted a revegetation study that began in 1988 and continued through 1995. The test program was conducted by the Office of Arid Land Studies, University of Arizona. Studies centered around water harvest techniques and irrigation of reclaimed sites, transplanting of species, soil testing and effectiveness of using native seed. Results are summarized in:

> Office of Arid Lands Studies, University of Arizona. 1995. Revegetation options for the Mesquite Mine site. 27 pp.

Similar studies have been conducted since the late 1980's at the nearby American Girl and Picacho mines. Both of these mines are in closure and techniques used in test plots proved successful in final large reclamation. Major findings from the reclamation studies conducted at the Mesquite Mine and other mines in the area are as follows:

- Irrigation should be minimized. While large scale irrigation is not recommended, irrigation on the scale of individual plants will improve survival and growth of perennial species.
- Water harvest techniques involving the creation of microcatchments has proven highly successful at promoting germination and inhibiting erosion.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-22: (continued)

- Use of native collected seeds that are genetically adapted to the harsh desert climate, are preferable to commercial seed.
- Seeding should be conducted immediately after earthwork, prior to formation of a soil crust.
- Testing of various soil amendments, including fertilizers and straw mulches , did not show any particular benefit.
- Transplantation proved to be successful only with certain species, such as ocotillo and cacti. Plants that are to be moved as part of disturbance activities should be immediately transplanted to its final destination. Use of nurseries to store transplants requires transplanting individual plants on two occasions and increases ultimate mortality rates.
- The desert soils are more important as a seed source than as growth media. Sandy soils collected from desert washes contain abundant seeds. Fine grained soil from desert pavement areas are poor growth media due to an acidic nature.
- Desert pavement soils support sparse vegetation, with less than 0.5 percent perennial vegetation cover concentrated mainly in shallow depression. There is little annual vegetation except sparse annual plants in years of exceptional moisture.
- The desert pavement soils are not suitable as a growth medium or seed source for reclamation due to the strongly saline subsoil, alkali conditions, and the gravelly or rocky textures. Desert pavement soils previously tested were basic at a pH range of 8.3 to 9.0, with high sodium and alkalinity in the surface and subsurface soils. The old weathered alluvium substrates have high amounts of some chemicals in the substrate (lime, calcium as carbonates, sodium) that were further concentrated in the surface soils. The materials that were concentrated or occurred in parent materials in high concentrations were salts, sodium, boron and sulfur. (Soil Resource Evaluation for Imperial Project, Bamberg, August 1995)
- The organic matter content of the desert pavement soils is very low and variable, a factor typical of desert soils. Organic matter is uniformly less than one percent in most of the samples tested. The nutrient status is low and variable in available nitrogen (N), phosphorus (P), and potassium (K). Boron, sulfur, and calcium concentrations are high in some of the soils. These high concentrations can cause plant growth problems even in adapted species as evidenced by the lack of perennials and shrubs.
- In general, the physical and chemical characteristics of surface soils are severely limiting for plant growth. Salvage of desert pavement soil was tested in reclamation test plots at the American Girl mine. The added soil had no perennial plant germination and growth, and only a few annuals and weeds germinated during a 5-year testing period. For reasons discussed, desert pavement soils will not be salvaged from expansion areas.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-23:

Please see Responses to Comment 18-15 and 18-16.

8-24 F) **Procedures for seed collection.** The details of seed collection, processing, germination tests and storage have not been described. Information was provided in the plan on the collection of seed from the ground. However, the efficacy of this method has not been substantiated with regard to seed viability or seeding rates (based on weight). The reclamation plan should provide the amount of seed needed for revegetation by species and area, as well as an estimate of the amount of seed that can be collected per year. This information will help to determine the amount of seed that will need to be purchased. For some species, it may be difficult to obtain local seed. In those cases, it may be necessary to employ *seed increase*, a method that employs the intense cultivation of the needed plants in a designated area, and the subsequent harvest their fruit.

8-25 G) **Salvage/transplant members of the Cactaceae and Agavaceae families.** The reclamation plan should set forth a procedure for the salvage and transplanting of the members of these two plant families.

8-26 H) **Success criteria for revegetation.** Success criteria for all vegetation types and landforms that will be revegetated (for example: microphyll woodland, catchment basins, roads, and transplants) should be described in the plan. Generic success criteria were provided, however, specific criteria must also be established for each recreated landform.

8-27 I) **Monitoring and evaluation of revegetation success.** Procedures for the monitoring and evaluation of revegetation success must be elaborated in the plan. The procedures will need to specify the duration of monitoring and evaluation. The draft Reclamation Plan states that monitoring will continue for 5 years beyond closure. In arid lands, achieving success criteria may take 10 or more years. Monitoring must continue until success criteria are met. Additional years spent monitoring will need to be reflected in the financial assurance cost estimate.

8-28 J) **Remedial revegetation measures**. Specific remedial measures should be set forth in the plan in the event of poor or failed revegetation.

8-29 K) **Inadequate information to assess impacts and design mitigation measures.** As discussed above, without the information from the incomplete or inadequate studies and reports, potential impacts to long-term slope stability, biological resources, and public safety can not be assessed or adequately mitigated.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-24:

The seed collection program is based on experience of seed collection, application, and monitoring of results at the Mesquite Mine. Methods for seed collection have been tested previously at the American Girl and Picacho Mines by Dr. Sam Bamberg, Reclamation Consultant. The seed collection program techniques are as follows:

1. Sources of Seeds and Collection Methods – During the testing program, two methods of seed collection were evaluated. The first was direct seed collection from plants or soil surfaces immediately beneath plants growing in the vicinity, and the second was salvaging the surface few inches of soil from areas to be disturbed for the natural seed already mixed in the soils. There have been excellent results from sowing seeds from both sources in the general revegetation testing programs, although the surface soils had more diverse kinds of seeds for annuals and perennial plants. Approximately 75 species of perennial and annual plants have been observed in revegetation monitoring plots. This plant diversity is significantly greater than areas of historic disturbance than were not revegetated using the methods described. The preference is to use locally collected seeds, which are adapted to local climactic conditions, rather than purchase seeds.

   The most efficient method for the direct seed collection is to harvest seeds directly from plants and from the soils surfaces around shrubs and in depressions or washes where seed collects from wind and water deposition. Seeds can be directly harvested from some plants such as annuals, ocotillo, or ironwood (which have numerous seed pods on and at the ends of branches). This seed does not need to be cleaned or winnowed, but can be fumigated and stored in sealed containers until sown.

   The majority of seed that will be sown will be collected from soil surfaces rather than from individual plants. There were several practical problems encountered with only collecting seed directly off the plants in the revegetation programs. These include:

   - Seeds mature on trees, perennial shrubs and herbs, and annuals at vastly different time throughout the year. In addition, not all plants set seed in any one growing season. Seed collection directly from plants requires attempting to collect seeds from the varying plant species at different times throughout the year. This is simply not practical from the standpoint of enormous amount of time and large number of personnel required. Early attempts at collecting large volumes of seed from local native plant populations failed. A few species with large pods or seed heads, such as, ironwood and palo verde, and some shrubs are amenable for seed collection directly from plants.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-24: (continued)

- The method of collecting seeds only from plants results in seeds from far fewer species of plants being collected. In particular, collecting seeds from the grounds in washes results in adding many small seeds from annual species to the seed mix that could not be collected from individual plants.
- It is difficult to collect large enough volumes of seeds for revegetating areas larger than about 10 acres.
- Seeds collected directly from plants may be immature or non-viable.
- In some drought years very few seeds are produced on perennial plant species in native vegetation, and none by annuals (for example, during the recent growing seasons of 1998 and 1999).

Advantages of collecting seed off the ground, underneath shrubs and in wind rowed depressions include:

- A large volume of seed can be collected in a short time after most plants have matured and shed seeds.
- Seed can be collected practically at any time of year after a good productive year, and stored.
- Seeds from a large number of different plant species of various life forms are in the seed mix collected. The litter and soil materials collected with the seed off the ground contain nutrients, spores, and other soil organisms that are beneficial for revegetation. The concern that bulk seed collected off the ground may contain weed seeds is not considered a serious problem. The seed collection program will avoid disturbed areas with large amounts of weedy plants in order to prevent the collection weed seeds. Seeds are collected from areas of native vegetation that have no recent soil disturbance. Areas in the desert at and around the Mesquite Mine that are far removed from the repeated disturbance of traffic, agriculture, farming, or grazing have very little weedy vegetation.

The viability of seeds collected from the ground is not considered a problem. As a genetic adaptation to the harsh desert environment and lack of precipitation, seeds from desert vegetation are known to maintain viability for long periods of time, often years. Reclamation testing and final reclamation at nearby mine sites confirms that viability of seeds collected from the ground is sufficient to attain stated revegetation standards.

The amount of seed collected in any one year depends on the time and effort. In the 1998-1999 season at the Mesquite Mine, approximately 2850 lbs. of seed was collected and sown

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-24: (continued)

on 650 acres. This is a seeding rate of 4 to 5 pounds of seed per acre in approximate 18 pounds of collected materials (seed and plant debris). The work was accomplished using a 4-person crew over 21 working days.

The sandy soils in washes are a productive source of seeds that have naturally collected by wind and water action. These soils can be scraped with a front-end loader and loaded directly onto haul trucks as part of a soil salvage program. The salvaged soil can either be stockpiled for later use, or spread immediately into prepared catchment basin plots or any prepared surface to be reclaimed. At the Mesquite site, the latter option will be used.

2. Sowing of Seed and Appropriate Season - Seeding procedures using the hand-collected seed will include sowing the seed onto prepared surfaces using hand broadcasting, and using aerial seeding on larger areas (more than about 10 acres). In general, there was good germination and growth of plants. The best time to sow seeds or spread salvaged surface soils is immediately after preparing the soil by fine grading or ripping, when the soil is loose. Disturbed soils form a hard crust by wetting and sun baking after a season or two, and seeds may lie on the surface if spread on these hard surfaces. If possible, the best time for seeding is in the late fall.

3. Seed processing and germination – Seed to be sown immediately is not processed. Seed to be stored is mixed, large debris removed, and treated with a herbicide/fungicide. Seed for aerial seeding must be processed for uniform size using a series of grading screens. Rates of seeding that have been successful in testing and reclamation programs were 4 to 5 pounds of seed per acre in approximate 18 pounds of collected materials. The seeding rate is variable depending on topography, and distribution of microcatchment basins.

Response to Comment 8-25:

Cactus plants can be salvaged by digging whole specimens using a backhoe, and placing in a prepared location. Plants should be watered twice, immediately after transplanting and again after about 3 hours. Depending on the species, the transplants may have to be watered occasionally the first year. It is not necessary for the species of cactus present to orient the cactus to any compass point. Jumping cholla (Opuntia bigelovii) can be propagated by placing the separated joint ends into the ground and then watering. There are no species of plants in the Agave genus or any other species in the Lily family (Liliaceae) at the Mesquite Mine.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-26:

Based on comments received, the proposed success criteria for revegetation has been modified from that described in the DEIS/DEIR. The Revised Reclamation Plan describes the proposed success criteria that are also summarized below.

Reclamation will result in generally two types of recreated landforms with two corresponding vegetation types: 1) drainages (wash complexes) and associated side slopes reclaimed to microphyll woodland type habitat, and 2) graded microcatchment basins on open slopes and flats – a modified type of upland shrub scrub vegetation

Separate revegetation standards are proposed for areas of wash habitat reclamation and for reclaimed areas outside the washes. The success criteria are based on the results of baseline vegetation surveys performed by Bamberg Associates ("Vegetation Baseline Monitoring Report," 2000) and comparison with similar natural vegetation types. In the case of wash habitat reclamation, the baseline vegetation will be that of large washes. The vegetation type defined in the baseline survey that most closely resembles the remainder of the revegetated mine areas is the alluvial flats and shallow wash complex.

The reclamation standard for wash habitat reclamation will be 50% of the diversity, and 60% of the perennial density of the undisturbed large washes as determined by quantitative surveys for two consecutive years. Based on this standard, proposed success criteria for wash habitat are as follows:

Perennial Tree and Shrub Density and Diversity and Proposed Success Criteria for Reclamation of diversion channels to Wash (microphyll woodland) Habitat*.

	Density (plants/acre)	*Diversity (# plants)*
Large Wash measured baseline values	497	15
Proposed success criteria	298	8

* - Proposed success criteria are based on 60% of density and 50% of diversity measured in the baseline vegetation monitoring surveys.

The proposed reclamation standard for areas outside the major washes is based on the baseline standard for alluvial flats and shallow wash complex. The cover and density standard is 35 percent of the perennial plant density measured during the baseline vegetation surveys. The standard for species diversity for these areas is 30% of the values measured during the baseline vegetation

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-26: (continued)

surveys. Based on this standard, proposed success criteria for each of the vegetation types in the surveyed sites are shown below:

Perennial Shrub Density, Cover, and Diversity and Proposed Success Criteria for the Three Mesquite Mine Expansion Areas*.

	Density (plants/acre)	*Cover (%)*	*Diversity (# plants)*
Flats & shallow wash –measured baseline values	348	5	13
Proposed success criteria	122	2	4

* - Proposed success criteria are based on 35% of density, 35% of cover, and 30% of diversity measured in the baseline vegetation monitoring surveys.

The selection of the proposed success criteria is based on observations of mature desert ecosystems and is considered a benchmark, indicating a sustainable vegetation community has developed in the area, that active management of the reclaimed sites is no longer required and that reclamation sureties associated with revegetation can be released. At maturity, cover and density will be significantly greater than the 35% standard.

The 25% standard is considered a benchmark, indicating a sustainable vegetation community has developed in the area, that active management of the reclaimed sites is no longer required and that reclamation sureties associated with revegetation can be released. At maturity, cover and density will be significantly greater than the 25% standard.

Response to Comment 8-27:

Quantitative vegetation survey techniques will be similar to those used during previous vegetation and monitoring surveys. The techniques are adapted to sample the desert vegetation present in the study area, and are useful in estimating cover and determining shrub density. The method that will be used for sampling vegetation variables and documenting revegetation success will be a belt transect technique. This sampling technique, successfully used at other nearby mines, employed transects of 10 to 12 linear plots. These plots are typically 6x30 feet (2x10 meters) in size or larger, and laid end-to-end and oriented parallel to or across environmental gradients. Lines of transects generally run for 900 to 1200 feet or more, depending on the ecological scale of vegetation in relationship to topography. Vegetative, topographic, erosional, and soil parameters are noted in each plot. The transects are analyzed for density, cover, species richness, dominant, type of vegetation, and amounts of bare areas as they relate to topography and substrate.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-27: (continued)

The number of samples is based on the heterogeneity of the vegetation in the plots being surveyed. Sample adequacy will be determined in the field, in consultation with BLM personnel, using a sample adequacy formula adapted to heterogeneous vegetation with low perennial densities and plant cover.

The locations, number of samples, variables recorded, and data analysis methods will be determined as described below:

Sampling Locations: reclaimed mine site transects will be located on representative, randomly selected reclaimed areas at the site. Transects in areas of overburden rock and heap leach pads will be oriented along gradients on the different facing slopes. A 100 feet tape will be stretched along the transect line to serve as the centerline of transects. A total of 10 to 12 contiguous plots will be surveyed along each transect.

Number of Samples: Number of samples (transects and plots) will be field determined using adequacy formulas (see Reclamation Plan, available for review at the El Centro office of the Bureau of Land Management and Imperial County Department of Planning and Building, for formulas to be used). At nearby mines, surveys typically employed transects of 10 to 12 linear plots. These plots are typically 6x30 feet (2x10 meters) in size or larger, and laid end-to-end and oriented parallel to or across environmental gradients. Lines of transects generally run for 900 to 1200 feet or more, depending on the ecological scale of vegetation in relationship to topography.

Variables: The variables will be chosen to determine vegetation characteristics. Variables in the transects measured for vegetation will be:

- Diversity - The number of different native plant species within a given sample area;
- Density - The number of individuals of each perennial species rooted within a given sample area
- Cover - The vertical projection to the ground surface of the crown or shoot area of a species or all species combined, as a percent of the total plot area.

Annual plants present will be recorded simply as a cover percentage and species identified. The percent cover of each perennial shrub (and tree) species within each linear plot will be determined by counting individuals of each species and measuring or estimating the cover size of each. The diameter or height of each tree or shrub plant can also be measured.

Following seeding of reclaimed areas, monitoring will be conducted on an annual basis until reclamation standards have been attained. Depending on the abundance of rainfall immediately

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY KENNETH SALT, DATED OCTOBER 30, 2000 (continued)

Response to Comment 8-27: (continued)

following seeding, germination may be limited the first season or two after seeding. Annual monitoring during this period will be more qualitative in nature to assess general vegetation parameters. Quantitative monitoring will be conducted annually after vegetation becomes established in order to determine success criteria measurements and assess whether remedial measures are necessary. Quantitative measurements must demonstrate the attainment of success criteria for two consecutive years to allow bond release. Cost calculations that are the basis for bonding assumes ten-year monitoring period for revegetation.

Please see also Responses to Comments 8-14 and 8-26.

Response to Comment 8-28:

Based on the results of revegetation monitoring, areas may be delineated where revegetation efforts appear to be unsuccessful. In these cases the following measures shall be taken:

1. Assess the reasons for lack of success. This will include evaluating such factors as soil compaction, lack of soil fines, poor water management, or lack of seeds or plant propagules.
2. Address the problem by responding to the reason for lack of success. Remedial measures might include soil ripping, regrading, water enhancement, or reseeding.
3. Monitor to insure remedial measures result in adequate vegetation.

Response to Comment 8-29:

The Draft EIR/EIS included performance-based mitigation measures to address the concerns raised by this comment. Newmont has prepared the requested design since issuance of the Draft EIR/EIS, and OMR has approved a plan to stabilize pit slopes through the use of toe buttresses. With stable slopes, there is no issue of public safety relative to slope stability. Biological resources near the pit lakes would be protected from dietary intake of potentially harmful lake water compounds through minimizing the amount of vegetation that could utilize the lake waters by constructing pit slopes as steep as possible under SMARA within 20 feet ± of the projected pit lake elevations.

The impacts to avian species from exposure to future pit lakes is examined in *Screening-Level Ecological Risk Assessment of Pit Lakes at the Mesquite Mine, Imperial County, California* (Shepherd Miller, 2000. The analysis concludes that, as the pit water chemistry evolves through evaporation, salinity increases to the point that the water will become unpalatable to avian species (and other identified site receptors). This will likely preclude significant utilization of the pit water as a drinking water source. Potential risk to receptors could exist through the dietary pathway. This risk would be minimized by limiting the development of vegetation along the margins of the pit lakes. Public safety would be protected as described in the Response to Comment 8-11.

Please see Responses to Comments 2-1, 2-2 and 2-3.

We look forward to your response to our comments in the final environmental document and reclamation plan. In the meantime, if you have questions on our comments or require technical assistance on specific mine reclamation issues, please contact the Office of Mine Reclamation at 801 K Street, MS 9-06, Sacramento, CA 95814; or, phone (916) 323-8567. You may also call me at (916) 445-8733.

Kenneth E. Trott

Jason Marshall
Assistant Director

Attachments:
1. October 17, 2000 letter,
2. July 15, 1999 letter
3. February 2, 1999 letter.

cc: Richard Cabanilla
Imperial County Planning/Building Department
939 Main Street
El Centro, CA 92243

Greg Pelka
State Lands Commission
200 Oceangate, 12th Floor
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Neal Krull
California Regional Water Quality Control Board
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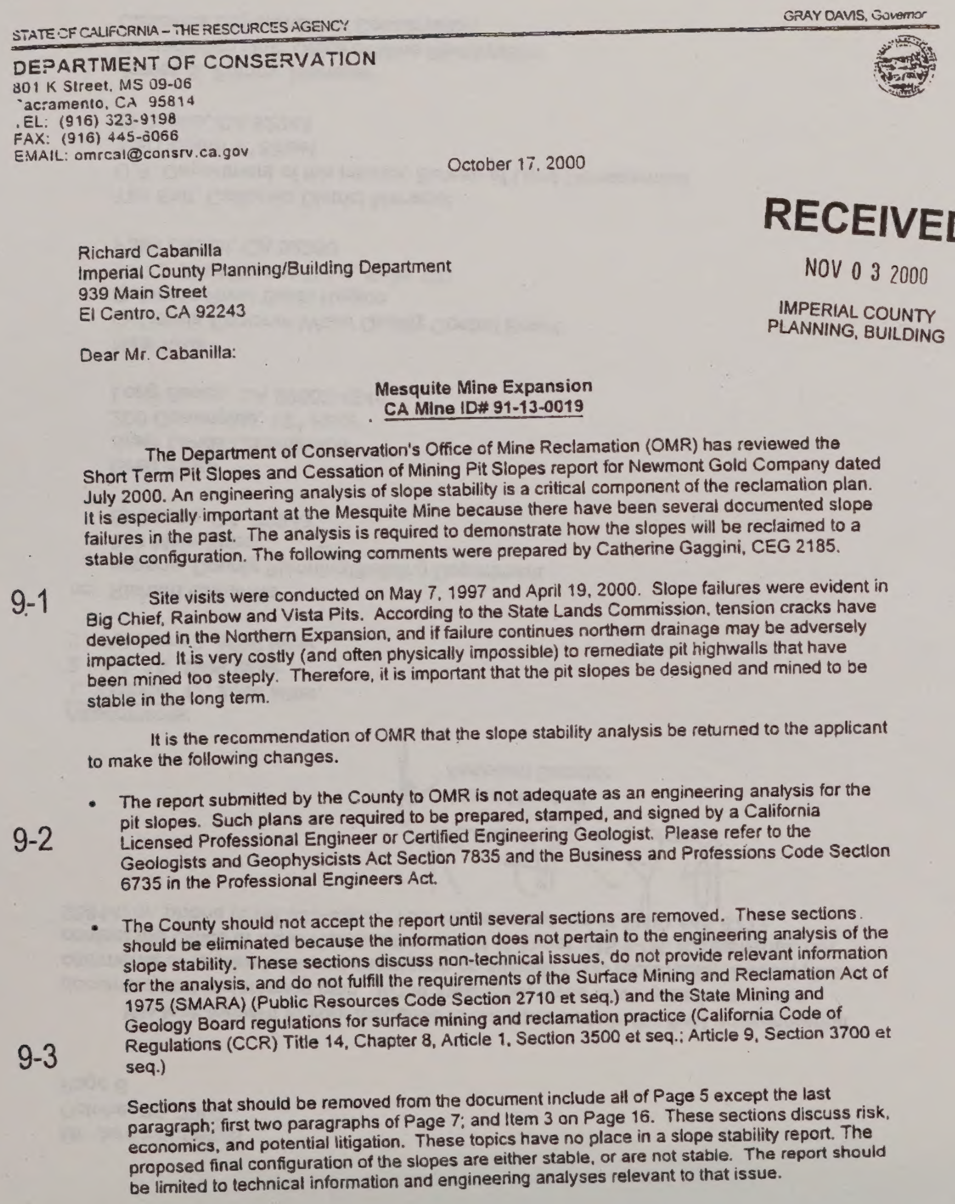
El Centro, CA 92243

James S. Pompy, Manager
Reclamation Unit, Office of Mine Reclamation
California Department of Conservation



STATE OF CALIFORNIA – THE RESOURCES AGENCY
GRAY DAVIS, Governor

DEPARTMENT OF CONSERVATION
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October 17, 2000

RECEIVED
NOV 0 3 2000
IMPERIAL COUNTY
PLANNING, BUILDING

Richard Cabanilla
Imperial County Planning/Building Department
939 Main Street
El Centro, CA 92243

Dear Mr. Cabanilla:

Mesquite Mine Expansion
CA Mine ID# 91-13-0019

The Department of Conservation's Office of Mine Reclamation (OMR) has reviewed the Short Term Pit Slopes and Cessation of Mining Pit Slopes report for Newmont Gold Company dated July 2000. An engineering analysis of slope stability is a critical component of the reclamation plan. It is especially important at the Mesquite Mine because there have been several documented slope failures in the past. The analysis is required to demonstrate how the slopes will be reclaimed to a stable configuration. The following comments were prepared by Catherine Gaggini, CEG 2185.

9-1 Site visits were conducted on May 7, 1997 and April 19, 2000. Slope failures were evident in Big Chief, Rainbow and Vista Pits. According to the State Lands Commission, tension cracks have developed in the Northern Expansion, and if failure continues northern drainage may be adversely impacted. It is very costly (and often physically impossible) to remediate pit highwalls that have been mined too steeply. Therefore, it is important that the pit slopes be designed and mined to be stable in the long term.

It is the recommendation of OMR that the slope stability analysis be returned to the applicant to make the following changes.

- 9-2 The report submitted by the County to OMR is not adequate as an engineering analysis for the pit slopes. Such plans are required to be prepared, stamped, and signed by a California Licensed Professional Engineer or Certified Engineering Geologist. Please refer to the Geologists and Geophysicists Act Section 7835 and the Business and Professions Code Section 6735 in the Professional Engineers Act.
- 9-3 The County should not accept the report until several sections are removed. These sections should be eliminated because the information does not pertain to the engineering analysis of the slope stability. These sections discuss non-technical issues, do not provide relevant information for the analysis, and do not fulfill the requirements of the Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code Section 2710 et seq.) and the State Mining and Geology Board regulations for surface mining and reclamation practice (California Code of Regulations (CCR) Title 14, Chapter 8, Article 1, Section 3500 et seq.; Article 9, Section 3700 et seq.)

  Sections that should be removed from the document include all of Page 5 except the last paragraph; first two paragraphs of Page 7; and Item 3 on Page 16. These sections discuss risk, economics, and potential litigation. These topics have no place in a slope stability report. The proposed final configuration of the slopes are either stable, or are not stable. The report should be limited to technical information and engineering analyses relevant to that issue.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY JAMES POMPY, DATED OCTOBER 17, 2000 (continued)

Response to Comment 9-1:

Please see Responses to Comments 8-4 and 8-10.

Response to Comment 9-2:

The slope design report: *Report to Newmont Gold Company Mesquite Mine Re Short Term Pit Slopes and Cessation of Mining Pit Slopes*, July, 2000 was prepared by Charles Brawner, a Professional Engineer (PE). The report incorporated data from strength testing conducted by Shepherd Miller, Inc. and Slope/W stability analysis conducted by AGRA Earth and Environmental. The final report and associated data was reviewed by Dr. Lawrence A. Hansen, California Professional Geotechnical Engineer (#2020), AGRA Earth and Environmental, who also visited the Mesquite site with Mr. Brawner to observe the existing slopes and confer with on-site mining engineers. Dr. Lawrence prepared a letter indicating agreement with the analysis, conclusions and recommendations of the Brawner Report. The letter of concurrence, bearing the California PE seal was submitted to OMR and County of Imperial with the Brawner report.

Dr. Hansen prepared the Response to Comments 9-5 through 9-8 in a letter to Newmont Mining Corporation dated January 18, 2001. Please see Response to Comment 8-5. Those responses listed below are excerpted from this letter.

Response to Comment 9-3:

The comment discusses the content of the Brawner report and states that certain sections should be omitted. Applicable changes have been made and the report resubmitted to OMR and County of Imperial. (Brawner, 2000; revised February, 2001). OMR has verbally indicated acceptance of the changes.

9-4
- The report suggests that CCR Section 3502(b)(3) section pertains to short term stability. This is not the case. According to CCR Section 3502(b)(3) ...In all cases, reclamation plans shall specify slope angles flatter than the critical gradient for the type of material involved. Whenever final slopes approach the critical gradient for the type of material involved, regulatory agencies shall require an engineering analysis of the slope stability. The State Mining and Geology Board (SMGB) regulations require that reclaimed slopes be stable in the long term. The slope stability analysis needs to identify a slope configuration that will be stable in the long term.

9-5
- The report states that a Static Factor of Safety of 1.3 and a Pseudo-static Factor of Safety of 1.0 are the standard FOS for open pit slopes. This is incorrect. The established minimum standard for slope stability in California is a static FOS of 1.5 and a pseudo-static Factor of Safety of 1.1. A pseudo-static FOS of 1.1can be considered stable if an appropriate seismic coefficient is used. Please refer to Guidelines for Evaluating and Mitigating Seismic Hazards in California, 1997, Department of Conservation, Division of Mines and Geology Special Publication 117 as adopted by the SMGB in accordance with the Seismic Hazards Mapping Act of 1990. Slope stability reports should use the established standard for stability in their analysis of the pit walls and fill slopes.

9-6
- The slope stability report must provide the seismic coefficient used for the analysis. Typically, a seismic coefficient of 0.15 is used in California.

9-7
- All data (shear strength values) from laboratory tests and cited reports should be referenced and attached to the analysis.

9-8
- Clarification is needed on how blasting vibrations compare to those of seismic waves (refer to page 3 of the report) and how such a parameter can be used in the analysis. The appropriateness of using short duration vibrations from blasting in pseudo-static slope stability analysis has not been demonstrated.

9-9
- The slope stability analysis should include information on the location of significant landslides that currently exist in the open pits, and in areas where tension cracks have appeared. It is our understanding that new tension cracks have developed on a portion of State Lands.

If you have any questions on these comments or require any assistance with other mine reclamation issues, please contact me at (916) 323-8565.

Sincerely,

James Pompy

James Pompy, Manager
Reclamation Unit

Cc: Greg Pelka

Neal Krull

Tim Salt, District Manager

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY JAMES POMPY, DATED OCTOBER 17, 2000 (continued)

Response to Comment 9-4:

The Brawner report describes existing pit wall stability as well as long term (Phase 2) stability. The report describes stability measures that would be undertaken to achieve this long-term stability. The measures would consist of the construction of toe buttresses to stabilize slopes into the post closure period.

Response to Comment 9-5:

The DOC letter states that the use of static and pseudo-static factors of safety of 1.3 and 1.0, respectively, is "incorrect", referencing Special Publication 117, "Guidelines for Evaluating and Mitigating Seismic Hazards in California" (State of California, Department of Conservation, Division of Mines and Geology, 1997). Instead, the letter states that static and pseudo-static factors of safety of 1.5 and 1.1, respectively, are applicable. However, this publication is not applicable to either the short-term operations or the cessation of mining at the Mesquite Mine because the publication specifically addresses projects defined "as any structures for human occupancy, or any subdivision of land, which contemplates the eventual construction of structures for human occupancy." Table 1 in the publication further defines the types of projects to which the guidelines apply. It is apparent that the pit slopes at the Mesquite Mine are not "structures for human occupancy" nor will the eventual use of the mine pits include "structures for human occupancy."

It is standard practice in the mining industry to utilize relatively steep mine pit slopes, recognizing that movement of the slopes will occur. However, such movements do not result in damage to the mine pits. This, of course, would not be the case if the slopes were supporting "structures for human occupancy." Furthermore, long-term stability of the pit slope will be implemented through placement of pit-slope toe buttresses as agreed by OMR.

It should also be noted that static and pseudo-static safety factors of 1.5 and 1.1, respectively, as recommended in Special Publication 117, were used in developing the design for the East Rainbow pit extension that will be adjacent to the highway. Though not technically a structure for human occupancy, failure of this slope could have an impact on public health and safety, and its design was developed using the more conservative factors of safety. Other slopes, which lack the potential for impacting public health and safety, are designed to a somewhat lower factor of safety. The post closure slopes, following implementation of slope stabilization measures outlined in the Brawner report, result in minimum static and pseudo-static safety factors of 1.4 and 1.0, respectively. Considering the location and ultimate end use of the property, this should be acceptable. Please also please see Response to Comment 9-6.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY JAMES POMPY, DATED OCTOBER 17, 2000 (continued)

Response to Comment 9-6:

The DOC letter states that the report "must provide the seismic coefficient used for the analysis", and further states that a value of 0.15 typically is used in California. As indicated in Table 2 of the report, a seismic coefficient of 0.2 was used in the slope stability analyses, which is more conservative than the value of 0.15. Had a value of 0.15 been used, the resulting pseudo-static factors of safety would have been higher, likely approaching or exceeding the 1.1 value which the DOC states is applicable.

Response to Comment 9-7:

As a general comment on computed factors of safety, any stability analysis is very dependent on the strength parameters used in the analysis. In the Brawner report, strength parameters of the dominant lithologies encountered in the pit slopes were determined through laboratory testing of drill core which was incorporated with observational data of existing pit slopes to establish the appropriate parameters under dry and saturated conditions. At the Mesquite Mine, many years of observing the performance of the slopes have generated very useful data concerning the shear strength of the geologic materials being excavated. This data typically has been used to verify the range in strength parameters used in stability analyses.

An addendum to the report containing all data from laboratory tests has been prepared and forwarded to County of Imperial and OMR. This addendum is available for public review at the El Centro offices of BLM and Imperial County Department of Planning and Building.

Response to Comment 9-8:

The DOC letter requests clarification on how blasting vibrations compare to seismic vibrations, and also notes that "The appropriateness of using short duration vibrations from blasting in pseudo-static slope stability analysis has not been demonstrated." Blasting to break rock has been conducted within the Mesquite Mine pits for many years, again resulting in a body of empirical data that demonstrates the impact of blasting on the pit slopes. If the blasting does not result in significant movement, then it can be concluded that the pseudo-static factor of safety is at least 1.0. Typically, the frequencies of vibrations produced by blasting are considerably higher than the frequencies of vibrations produced by earthquakes. Thus, for the same peak particle velocity, the acceleration component of the blasting time-history record is larger when compared to the acceleration component of the earthquake time-history record, but the displacement component is smaller. For the same or comparable acceleration values, the displacement values resultant of blasting are considerably smaller than those resultant of an earthquake.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY JAMES POMPY, DATED OCTOBER 17, 2000 (continued)

Response to Comment 9-9:

An earlier slope stability report: *Report to Newmont Gold Company Mesquite Mine Re Pit Slope Design and Development*, June, 1999 was prepared by Charles Brawner and submitted to County of Imperial and OMR. A letter of concurrence for the report was prepared by Dr. Lawrence Hansen, California Professional Engineer.

This report details the conditions for the existing mine slopes existing Mesquite Mine slopes. The report includes photos of existing pit walls and areas of pit wall failures. It is noted that slope failures occur along the north faces of all the pits in the area and are much less common along southern faces. This is due to the geometry of faulting being much less favorable along the northern faces. Other observations contained in the report are:

1. Rock conditions are extremely variable with many of the rock types having low strength and high rebound on excavation.
2. Extensive and variable local faulting and jointing, with weak fault infill were found to exist.
3. Rock below the water table was found to have weaker cohesive strength, requiring flatter pit slope angles below the water table.

Tension cracks have developed on portions of the state land parcel as the result of movement along the north Big Chief pit wall. The area of instability would be mined out as part of the Big Chief north extension. Newmont Mining Corporation is developing a plan to address this area of tension cracks in the event that mining of the North Extension does not occur. The plan calls for continued monitoring of the condition of the State lands into the future. If instability in the area increases, modifications to the existing diversion channel will be constructed to divert stream flows away from the zone of weakness and maintain the integrity of the existing diversion. Existing fencing and berms will be maintained to insure public safety. If necessary, additional berms will be established along the pit perimeter. A detailed cost estimate for the continued monitoring of the site and corrective actions is being prepared. Included will be costs for reclamation associated with any corrective action. These costs will be the basis for modified reclamation bonding associated with the existing Mesquite Reclamation Plan. The County of Imperial and the Bureau of Land Management would oversee implementation of the measures listed above as part of their ongoing oversight of the existing mining permits.

STATE OF CALIFORNIA – THE RESOURCES AGENCY
GRAY DAVIS, Governor

DEPARTMENT OF CONSERVATION
801 K Street, MS 09-06
Sacramento, CA 95814
TEL: (916) 323-9198
FAX: (916) 322-4862
EMAIL: OMRCAL@CONSRV.CA.GOV

July 15, 1999

RECEIVED
NOV 0 3 2000
IMPERIAL COUNTY
PLANNING, BUILDING

Richard Cabanilla
Imperial County Planning/Building Department
939 Main Street
El Centro, CA 92243

Dear Mr. Cabanilla:

Mesquite Mine Closure and Reclamation Plan
CA Mine ID# 91-13-0019

The Department of Conservation's Office of Mine Reclamation (OMR) has reviewed the Mine closure and Reclamation Plan for the Mesquite Mine (CA Mine ID# 91-13-0019). The plan addresses the expansion of open-pit mining, expansion of waste rock storage areas, and the construction of ancillary facilities. With the expansion, the mine will encompass 4127 acres. The Mesquite Mine is located approximately 40 miles northeast of Brawley off State Highway 78. A site visit was conducted on January 29, 1999. The following comments prepared by Catherine Gaggini and Karen Wiese are offered to assist in your review of this project.

10-1 The Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code Section 2710 et seq.) and the State Mining and Geology Board regulations for surface mining and reclamation practice (California Code of Regulations (CCR) Title 14, Chapter 8, Article 1, Section 3500 et seq., Article 9 Section 3700 et seq.)(copies enclosed) require that specific items be addressed or included in reclamation plans. The following items were not adequately addressed in the document submitted and/or will be submitted to OMR for review at a later date. The reclamation plan should be revised to include the following items.

Geotechnical Requirements
(Refer to CCR Sections 3502(b)(3),(b)(4), 3704 (a),(b),(d),(f))

1. According to the plan, a stability analysis is being prepared for the project. The analysis should be forwarded to OMR for review, and be referenced and attached to the reclamation plan. The analysis should state the current slope angles in the pits proposed for expansion and discuss the reasons for the large slope failures. The new proposed final slope angles should demonstrate long-term stability of the pit walls.

RESPONSE TO COMMENT LETTER FROM STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY JAMES POMPY, DATED JULY 15, 1999

Response to Comment 10-1:

This letter was submitted to the County of Imperial regarding review and revisions needed to the draft 1998 Mesquite Mine Closure and Reclamation Plan. The topics that the letter raises were addressed in the revised Reclamation Plan; Chapter 2 of the DEIR/EIS, especially Section 2.1.7; Sections 3.3 and 4.1.3 of the DEIR/EIS; and the Brawner Engineering report on Mesquite Mine Slope Stability (see page 8-2 for the full reference).

Hydrology and Water Quality

(Refer to SMARA Sections 2772(h)(1),(h)(2), 2773(a),
CCR Sections 3503(a)(3),(b)(1),(d), 3706(c),(d),(e),(f),(g), 3710 (b),(c), 3711(e), 3712)

2. The plan proposes two permanent stream diversions around the Big Chief Open Pit and the Rainbow Pit. According to the plan, detailed engineering specifications are not available for review at this time. The engineering specifications should be forwarded to OMR for review, and be referenced and attached to the reclamation plan.

Resoiling and Revegetation

(Refer to SMARA Section 2773(a), CCR Sections 3503(a)(1),(f),(g), 3704(c),
3705(a),(b),(c),(d),(e),(f),(g),(h),(i),(j),(k),(l),(m), 3707(b),(d), 3711(a),(b),(c),(d),(e))

3. The reclamation plan states that "revegetated areas will be monitored for five years…" We recommend that monitoring continue until success criteria are met. Re-establishment of vegetation on arid sites is slow and may take longer than five years.

4. The reclamation plan establishes success criteria of "25 percent cover, density and diversity of perennial species." The reclamation plan states that revegetation standards will **not** include cover, but includes cover as a measurement. The reclamation plan must define specific criteria based on baseline data for each of the community types to be re-established. For example, success criteria must be established for the upland areas (creosote bush scrub) and the microphyll woodland. These criteria must include specific measurements for density and species richness of both community types.

5. SMARA 2773(a) requires that a revegetation plan be prepared for the site and CCR 3705 (a) – (m) establishes standards for reclamation. These requirements were not addressed in the document reviewed. The reclamation plan states that Attachment 1 will be submitted upon completion. We request that this information be submitted to our office for review.

Environmental Setting and Protection of Fish and Wildlife Habitat

(Refer to CCR Sections 3502(b)(1), 3503(c), 3703 (a),(b),(c), 3704(g), 3705(a),
3706(a),(f),(g), 3710(a),(b),(c),(d), 3713(b)

6. The reclamation plan does not include information regarding the results of the baseline survey for biotic resources. Mitigation measures for sensitive species

may alter the manner in which reclamation is implemented. We request that this information be submitted to our office for review.

Please send a copy of the revised reclamation plan and permit issued by you as lead agency under SMARA to the Office of Mine Reclamation, Reclamation Unit at 801 K Street, M.S. 09-06, Sacramento, CA 95814-3529. The approved documents will be placed in the Office of Mine Reclamation Project files.

If you have any questions on these comments or require any assistance with other mine reclamation issues, please contact me at (916) 323-8565.

Sincerely,

James Pompy

James Pompy, Manager
Reclamation Unit

Enclosure

STATE OF CALIFORNIA – THE RESOURCES AGENCY
PETE WILSON, Governor

DEPARTMENT OF CONSERVATION
801 K Street, MS 09-06
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February 2, 1999

RECEIVED
NOV 0 3 2000
IMPERIAL COUNTY
PLANNING, BUILDING

Richard Cabanilla
Imperial County Planning/Building Department
939 Main Street
El Centro, CA 92243

Dear Mr. Cabanilla:

Notice of Preparation and Reclamation Plan for the Mesquite Mine Expansion
Draft Envirnonmental Impact Report (EIR) SCH #98121054

The Department of Conservation's Office of Mine Reclamation (OMR) has reviewed the Notice of Preparation, Plan of Operations, and Reclamation Plan for the Mesquite Mine Expansion Draft Environmental Impact Report (EIR) SCH #98121054. The project is an exploration program on lands adjacent to the Mesquite Mine, located approximately 40 miles northeast of Brawley off State Highway 78. A site visit was conducted by OMR staff on December 9, 1997. The following comments prepared by Karen Wiese and Catherine Gaggini are offered to assist in your review of this project.

11-1 The Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code Section 2710 et seq.) and the State Mining and Geology Board regulations for surface mining and reclamation practice (California Code of Regulations (CCR) Title 14, Chapter 8, Article 1, Section 3500 et seq., Article 9 Section 3700 et seq.)(copies enclosed) require that specific items be addressed or included in reclamation plans. The following items were not adequately addressed in the document submitted; we recommend that the reclamation plan be supplemented to fully address these items.

End Land Use
(Refer to SMARA Section 2772(g),(h), CCR Sections 3704(e), 3706(a), 3707 (a),(c), 3708

1. SMARA Section 2772(c)(7) requires that the reclamation plan include a description of the proposed use or potential uses of the mined lands after reclamation. As discussed during the site visit, an end use, such as open space must be designated.

RESPONSE TO COMMENT LETTER STATE OF CALIFORNIA DEPARTMENT OF CONSERVATION, SIGNED BY JAMES POMPY, DATED FEB. 2, 1999

Response to Comment 11-1:

This letter was received prior to preparation of the DEIR/EIS, and responses to the comments were provided in the Summary of NOP Responses table. As noted in the response to Comment 8-12, the reference to "Appendix B" in the Summary table was incomplete. It should have said "Appendix B of the 11/99 POO." The topics that the letter raises were addressed in the revised Reclamation Plan; Chapter 2 of the DEIR/EIS, especially Section 2.1.7; Sections 3.3 and 4.1.3 of the DEIR/EIS; and the Brawner Engineering report on Mesquite Mine Slope Stability (see page 8-2 for the full reference).

2. The reclamation plan should provide a discussion on what usable condition the open pits will serve upon termination of mining. If the pits are not backfilled, the reclamation plan should explain how the open pits will be reclaimed and readily adaptable for an alternate land use. Reclamation is defined in SMARA Section 2733 as the combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic life or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations, including adverse effects incidental to underground mines, so that **mined lands are reclaimed to a usable condition which is readily adaptable for alternate land uses and create no danger to public health or safety**.

3. SMARA Section 2772(c)(8) requires a description of the manner in which reclamation, adequate for the proposed use or potential uses will be accomplished. The reclamation plan does not provide sufficient information regarding the reclamation of each of the various vegetation types. For example, little information is provided regarding the wash habitat reclamation or proposed drainage ditch diversion. We recognize that it may be necessary to amend the revegetation mix or treatments after analysis of test plot data. Nevertheless, the revegetation plan should describe the range of treatments and species to be utilized for reclamation with the understanding that the treatments and species may change based on test plot results.

Environmental Setting and Protection of Fish and Wildlife Habitat

(Refer to CCR Sections 3502(b)(1), 3503(c), 3703 (a),(b),(c), 3704(g), 3705(a), 3706(a),(f),(g), 3710(a),(b),(c),(d), 3713(b)

4. CCR Section 3502 (b)(1) requires that the reclamation plan include a description of the environmental setting of the mine site. As discussed during the site visit, a survey of the biotic resources on the proposed site are necessary for the following three reasons: 1) to document baseline conditions, 2) to aid in development and evaluation of an appropriate revegetation plan, and 3) to evaluate purported mining and reclamation impacts on sensitive species and wildlife habitat.

Prior to site disturbance, a quantitative description of the biotic setting of the site will be necessary to adequately establish baseline conditions of the site. This quantitative evaluation should include percent cover or density and diversity measurements for **each** of the vegetation types that will be re-created on the reclaimed landform. Such quantitative data can also be used to guide the design of an appropriate revegetation plan.

Also prior to any site disturbance, the lack of impacts to sensitive, rare, threatened, and endangered plants and animals should be verified. The revegetation of the site should be designed to minimize impacts to those species. Without the knowledge of which species occur on the site, the revegetation design cannot target those species.

5. CCR Section 3703(a) requires that all sensitive species be conserved or mitigated. The California Department of Fish (DFG) and Game Natural Diversity Data Base lists the following species as being detected in the proposed project vicinity. If surveys detect any of these species in the project area, then formal consultation and appropriate mitigation should be developed with the agency having jurisdiction over the species; the US Fish and Wildlife Service and/or the DFG.

Le Conte's Thrasher *Toxostoma lecontei*	CDFG : Species of Special Concern
Nelson's Bighorn Sheep *Ovis canadensis nelsoni*	
Flat-Tailed Horned Lizard *Phrynosoma mcalli*	CDFG: Species of Special Concern
Munz's Cholla *Opuntia munzii*	Federal: Species of Concern CNPS: 1B
Fairyduster *Calliandra eriophylla*	CNPS: 2

6. If needed, we recommend that a copy of the Streambed Alteration Agreement be appended to the reclamation plan [CCR 3710(d)].

Geotechnical Requirements

(Refer to CCR Sections 3502(b)(3),(b)(4), 3704 (a),(b),(d),(f))

7. The reclamation plan should be supplemented with a site-specific slope stability analyses that evaluates the long-term stability of the proposed final pit slopes and waste rock disposal sites. The final mine slopes are only specified for the east wall of the East Rainbow Open Pit. The slope angle specified has an inter-ramp slope angle of 43 degrees (approximately 1:1 horizontal to vertical) with a pit depth of 570 feet. The existing mine slopes have exceeded the critical gradient for the material currently being mined. Several failures, some massive, have occurred in the walls of the existing pits at the mine site. The failures have occurred in similar slopes described for the East Rainbow Open Pit. The reclamation does not provide final slope angles for the Big Chief Open Pit Mine – South Extension, North Extension, and Southeast Extension.

If the pits are to remain open, a slope stability analysis must be performed to demonstrate long term stability of the proposed final pit slopes, as required by CCR Section 3502(b)(3). Final cut slopes are required to have a minimum factor of safety approved for the end use and conform with surrounding topography (CCR Section 3704(f).)

8. The reclamation plan should be augmented to specify final slope angles of 2:1 (horizontal to vertical) or shallower for the Overburden/Interburden Storage Areas. If the fill slopes are not regraded to 2:1, the reclamation plan must provide a site-specific stability analysis of the proposed angle-of-repose fill slopes that substantiates their long-term stability. In addition, the reclamation plan is required to provide site-specific data that demonstrates the angle-of-repose slopes can be revegetated. For example, vegetation test plots could be installed on existing angle of repose slopes this spring. Topsoil should be applied to the slopes, and seeded. A time schedule should be provided for installation and monitoring of test plot areas beginning at the earliest feasible tiime. If, after a specified amount of time, test plots show that revegetation can not adequately occur on the angle-of-repose fill slopes, changes should be made to the slope design to ensure revegetation success of the fill slopes. Section 3704(d) requires that the final reclamation fill slopes not exceed 2:1, except when allowed by site-specific engineering analysis, and can be revegetated. Engineering reports for the proposed slopes should be submitted to OMR for review and comment prior to approval of the reclamation plan.

Hydrology and Water Quality

(Refer to SMARA Sections 2772(h)(1),(h)(2), 2773(a), CCR Sections 3503(a)(3),(b)(1),
(d), 3706(c),(d),(e),(f),(g), 3710 (b),(c), 3711(e), 3712)

9. The reclamation plan should be supplemented with site-specific sediment and erosion control criteria for monitoring compliance with the reclamation plan as required by SMARA Section 2773(a), and CCR Sections 3503 and 3706. The reclamation plan states that diversion channels will be constructed to engineering specifications to pass the design storm events. However, the reclamation plan is void of design specifications and monitoring criteria for the proposed diversion channels. Therefore, it is not possible to evaluate the adequacy of the proposed drainage control. The engineering design and monitoring criteria should be provided to OMR for review and comment prior to approval of the reclamation plan.

Resoiling and Revegetation

(Refer to SMARA Section 2773(a), CCR Sections 3503(a)(1),(f),(g), 3704(c),
3705(a),(b),(c),(d),(e),(f),(g),(h),(i),(j),(k),(l),(m), 3707(b),(d), 3711(a),(b),(c),(d),(e))

10. CCR Section 3711 establishes **mandatory** standards for topsoil salvage, maintenance, and redistribution. The seeds, microbial organisms, and organic

matter found in the upper six inches of growth media constitute a significant resource when used in reclamation. Successful revegetation of the site may not be possible without this resource. We recommend that the upper six inches of growth media be stockpiled and reapplied during reclamation. Phasing the operation would obviate the need for long-term soil storage. As discussed during the site visit, the reclamation plan does not discuss this requirement. We recommend that the reclamation plan be amended to address the five subsections set forth in this section [CCR 3711(a) – (e)].

11. CCR Section 3705(g) requires that the revegetation efforts use native plant species. The reclamation plan states that "seeding will be of adapted native or naturalized plant species..." Table B-3 of the reclamation plan contains several species that are deleterious to the establishment of native plants. The following species are not native to the site and should not be seeded:

Bromus madritensis	Red brome
Shismus barbatus	Mediterranean grass
Brassica toumefortii	Mustard

In addition, the chart states that seeding rates are included. The seeding rates of these species have been **omitted** from Table B-3. These rates should be included for OMR review. The reclamation plan states that the "seed rate is sown by volume rather than by weight." Seed is sold and sown by **weight**, not volume. We suggest that the seed installation rate be expressed as pounds per acre.

The reclamation plan states that seeds from local plants will be collected from surface soils and plants. The OMR commends the collection of local seeds, but surface seed collection can be problematic. Seeds collected from the surface of the soil are likely to contain debris or invasive species, therefore, exact seeding rates cannot be ascertained. In addition, seeds that have been collected from the soil surface may contain insects that will eat the seeds if placed plastic bags. Proper seed storage is imperative for seed longevity. Please refer to the enclosed article on seed collecting.

12. To mitigate potential visual impacts and blend the waste piles with the surrounding terrain, varnished rock hand-sized or larger could be removed from the soil surface and stockpiled. During reclamation, these rocks can be replaced on the waste piles with the varnished side visible. Replacement of rock will also create microsites favorable to natural revegetation.

13. CCR Section 3705(b) requires test plots to be conducted simultaneously with mining to determine the most appropriate planting procedures. The information

gained from previously developed test plots should be contained in the reclamation plan. The reclamation plan discusses several revegetation techniques that may be employed. We recommend that specific test trials be designed to determine the most effective method(s) of site revegetation, based on microsite conditions. For example, the microsite conditions at the North Extension are different than those at the East Rainbow Extension. At a minimum, the tests should examine the effectiveness of seeding vs. container plantings, the effects of different types of mulches, the effects of fertilizer, if used, and the effects of irrigation. The most effective method(s) could then be incorporated into the reclamation plan, thereby, minimizing the possibility of poor revegetation. Test plots should be located in upland, angle of repose slopes, and wash habitats. We also recommend that revegetation treatments be delineated on a plan map.Any techniques that have not been tested, such as planting young ironwood and palo verde trees or seedlings should be tested prior to implementation.

14. CCR Section 3705(j) states that if irrigation is used, it must be demonstrated that the vegetation has been self-sustaining without irrigation for a minimum of two years prior to release of the financial assurances. Success criteria must be developed for any containerized plants such as the ironwood or palo verde that will be irrigated to ensure that these species survive at least two years after irrigation has ceased.

15. SMARA Section 2773(a) requires that a monitoring plan be developed that addresses topography, revegetation, and sediment and erosion control." Quantitative performance standards must be specified in the reclamation plan (see following comment). The monitoring plan should discuss frequency and duration of monitoring. For revegetation elements, monitoring should be conducted until performance standards are attained. The reclamation plan states that monitoring will continue for 5 years. Reclamation success in arid lands often exceeds the 5 year monitoring period. Monitoring should be conducted annually until performance standards are attained, with reports submitted to the lead agency and DOC.

16. CCR Section 3705(m) requires that the reclamation plan include performance standards (success criteria) for each vegetation type that will be re-created that can be quantified by cover, density, species-richness, and a sample size that provides a minimum 80% confidence level. As discussed in the site visit, the success criteria provided in the reclamation plan do not adequately meet this requirement. We recommend that these criteria be redefined according to baseline data and submitted to OMR for review.

Administrative Requirements

(Refer to SMARA Sections 2774(b), 2776, 2777, PRC Section 21151.7)

When the revised reclamation plan has been completed, please forward the document to OMR at 801 K Street, M.S. 09-06, Sacramento, CA 95814-3529. As we discussed during the site visit, all technical studies relevant to reclamation of the mine site should be referenced in and appended to the reclamation plan submitted to OMR for review and comment.

If you have any questions on these comments or require any assistance with other mine reclamation issues, please contact me at (916) 323-8565.

Sincerely,

James Pompy

James Pompy, Manager
Reclamation Unit

Enclosures

STATE OF CALIFORNIA GRAY DAVIS, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
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November 2, 2000

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STATE CLEARINGHOUSE

Clear
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E
(late)

Ms. Nadell Gayou
The Resources Agency
1020 Ninth Street, 3rd Floor
Sacramento, CA 95814

Mr. Jurg Heuberger
Imperial County Planning/Building Department
939 Main Street, Suite B-1
El Centro, CA 92243

Mr. Greg Thomsen, Field Manager
Bureau of Land Management
El Centro Field Office
1661 South 4th Street
El Centro, CA 92243

Dear Ms. Gayou, Mr. Heuberger and Mr. Thomsen:

Staff of the California State Lands Commission (CSLC) has reviewed the Draft Environmental Impact Report/Environmental Impacts Statement for the proposed Mesquite Mine Expansion, SCH #98121054. Based on this review, we offer the following comments.

Jurisdiction

12-1 As you are aware, the CSLC has jurisdiction over the proposed project and a lease from the CSLC is required. We are, therefore, a Responsible Agency under the California Environmental Quality Act (CEQA).

RESPONSE TO COMMENT LETTER FROM CALIFORNIA STATE LANDS COMMISSION, SIGNED BY MARY GRIGGS, DATED NOVEMBER 2, 2000

Response to Comment 12-1:
Comment noted.

Specific Comments

Figure 3.2.5, page 3.2-21

12-2 From the discussion on page 3.2-11 it appears that there were only 3 flow boundary lines (2 flow models) for an area of 12 square miles of fracture-controlled seepage. This may portray the fractured basement to be more homogeneous and consistent in transmissivity than it may actually be. Table 3.2-3,reveals a broad range of hydraulic conductivities for basement rocks—which K value or range of K values were used in calculating seepage in the flow net models?

Table 3.1-4, page 3.1-24

12-3 It appears the seismic information may not be the most current. We recommend consideration of USGS OFR 96-706 Appendix A (California Fault Parameters) available on the internet: www.consrv.ca.gov/dmg/pubs/ofr/96/08/a_faults. We also recommend review of ground accelerations. Probabilistic-based accelerations are readily available on the internet: www.consrv.ca.gov/dmg/rghm/psha/atlas/images .

Page 4.1.1-4, Section 4.1.1.3 Mitigation Measures, Incorporation by Regulations

The document states that, "The applicant shall implement the following measures to minimize potential effects of seismic activity:

- The applicant shall complete final pit wall design in conformance with SMARA requirements. Pit slope parameters will be determined by California registered engineers, with appropriate safety factors based on their professional experience. Final pit design shall be submitted to the California Department of Conservation, Office of Mine Reclamation (OMR), for review. Final decisions about pit design parameters shall be made by the County of Imperial, which has been delegated this authority under provisions of SMARA."

12-4 Prior to the issuance of a Mineral Extraction Lease for 657.85 acres of State School Lands to Newmont Gold Company, the CSLC would need to be satisfied that pit walls are adequately designed for the protection of the public and environmental resources, both during mining activities and for long term management of the lands after mining ceases.

RESPONSE TO COMMENT LETTER FROM CALIFORNIA STATE LANDS COMMISSION, SIGNED BY MARY GRIGGS, DATED NOVEMBER 2, 2000

Response to Comment 12-2:

The details of the flow net analysis, including the hydraulic conductivity values applied, are described in Section 2.3.4 (Site-Wide Water Balance) of the Hydrologic and Geochemical Study Report for the Proposed Mesquite Mine Expansion (BCI, 1999).

Current data indicates somewhat higher ground water inflows into the existing Big Chief Pit than either the Rainbow or Vista Pits. This indicates that the fractured bedrock forming the bottom and walls of the Big Chief pit is more permeable than that exposed in the other pits. Based on these apparent differences, two flow nets were constructed to represent the differing hydraulic properties between the eastern and western portions of the mine site. For the eastern flow net, an average hydraulic conductivity (K value) of 0.045 ft/d for the gniessic bedrock was used. A hydraulic conductivity of 0.08 ft/d was used for the western area.

Response to Comment 12-3:

The recommended USGS and Department of Conservation references have been reviewed and do not appear to contain any new information that would indicate a seismic risk at the site greater than that addressed in the DEIR/EIS.

In most cases, the maximum moment magnitude of faults as identified in USGS Open File Report 96-706 (California Fault Parameters) is lower than or equal to the moment magnitude in DEIR/EIS Table 3.1-4. The only exception is for the Brawley Seismic Zone, for which USGS Open File Report 96-706 identifies a maximum moment magnitude that is slightly higher than shown in the DEIR/EIS (6.4 compared to 6.25). This difference is not material to the DEIR/EIS seismic analysis because the difference is small and because the Brawley Seismic Zone is not close enough to be the controlling fault in seismic hazard analysis even if the slightly higher M 6.4 MCE is considered. The controlling fault for the site is the East Mesa Fault, which was evaluated in the seismic analysis to be conservative, even though it is not certain that this fault can generate an earthquake (Environmental Solutions, Inc. 1993a). The potential East Mesa Fault was evaluated based on a M 6.5 MCE and is much closer to the site than the Brawley Seismic Zone (i.e., 9 miles compared to 29 miles).

The Seismic Hazard Map of California at the www.conserv.ca.gov/dmg/rghm/psha web address indicates that the predicted ground acceleration at the site with a 10 percent probability of exceedence in 50 years is between 0.1g and 0.2g. There is no conflict between this prediction and the seismic analysis in the DEIR/EIS.

Response to Comment 12-4:

Pit wall slope stability analyses will be submitted to SLC as part of the lease discussion process.

Page 4.1.3-9, Impacts of the Proposed Action

Drinking Water Pathway

We note that future concentrations of boron, selenium, silver and fluoride may present a potential future risk to site receptors from the drinking water exposure pathway from pit lakes that are expected to result after cessation of mining. Mitigation Measure 10 under section 4.1.3.4 states:

12-5 "10. Mine pit walls within twenty feet above and below the projected long-term water levels will be designed to be as steep as possible, to minimize the development of vegetation that could serve as dietary pathways for ingestion of harmful compounds by birds and animals."

Although we share concern for ingestion of harmful compounds by birds and animals, we believe pit walls "designed to be as steep as possible" could lead to additional public risk from slope failure or could contribute to falls due to steep, slippery, muddy surfaces around the lakes edge.

We appreciate the opportunity to comment and the continued coordination efforts on this project. If you have any questions, please contact Greg Pelka at (562) 590-5227.

Sincerely,

Mary Griggs

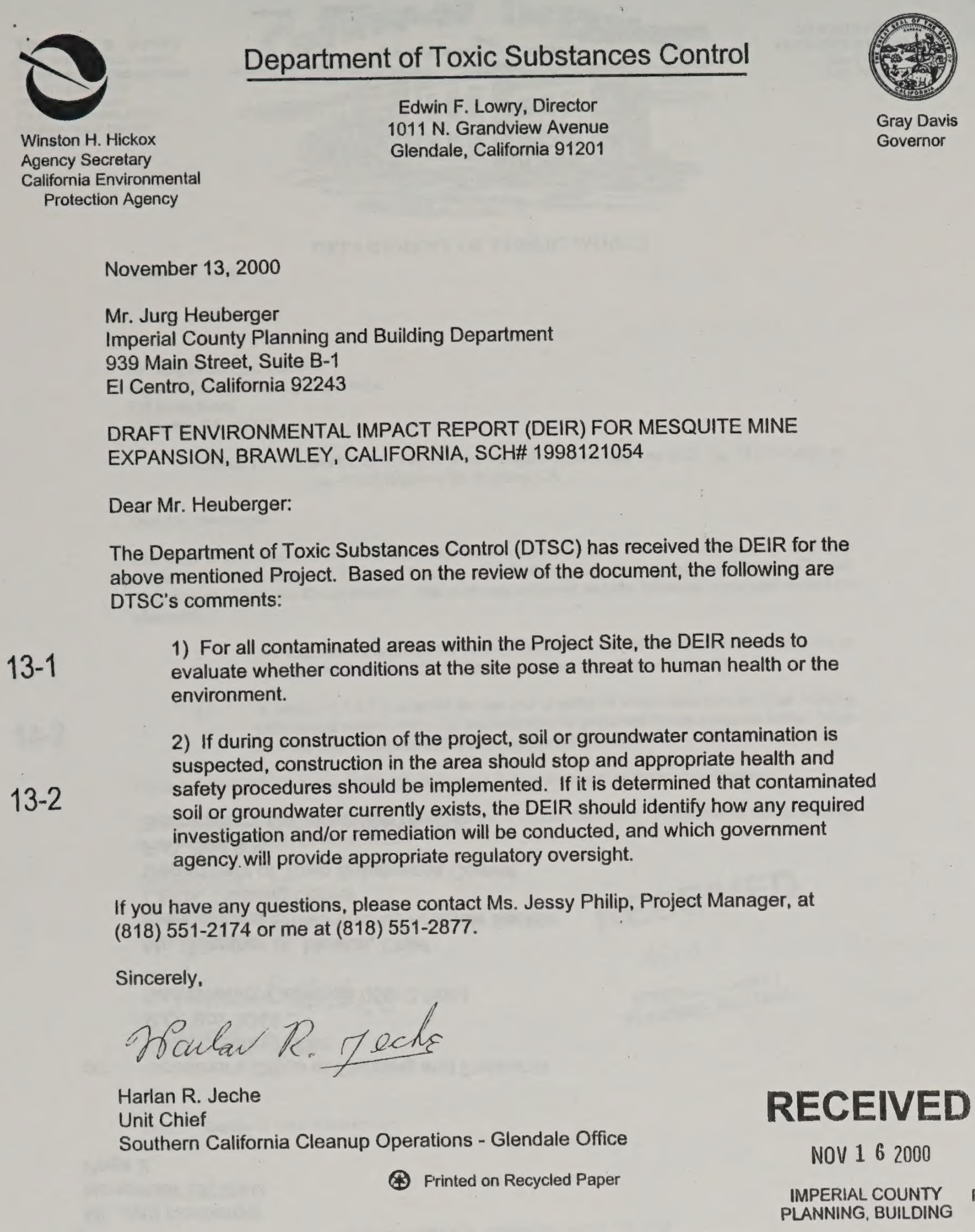
Mary Griggs, Assistant Chief
Division of Environmental Planning
And Management

cc: Greg Pelka
Maurya Falkner
OPR

RESPONSE TO COMMENT LETTER FROM CALIFORNIA STATE LANDS COMMISSION, SIGNED BY MARY GRIGGS, DATED NOVEMBER 2, 2000

Response to Comment 12-5:

The phrase "designed to be as steep as possible" is modified in the Final EIR/EIS to include the phrase "while complying with all applicable slope stability requirements." Thus slope stability will be protected, while minimizing the potential for extensive vegetative growth that could pose a risk to wildlife. The pit lakes are not proposed as recreational attractions. Human approach to the existing and future pit lakes would be minimized through placement of earthen berm barriers to preclude vehicular entry to the pit, and creation of an undulating surface of microcatchments outside the pits that would, as a secondary effect, make walking more difficult. The area will be posted with appropriate signs warning of potential hazards. A limited portion of the pit lake topography will be constructed at a lower angle to allow any animals or persons entering the lake to get out.



Department of Toxic Substances Control

Edwin F. Lowry, Director
1011 N. Grandview Avenue
Glendale, California 91201

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

November 13, 2000

Mr. Jurg Heuberger
Imperial County Planning and Building Department
939 Main Street, Suite B-1
El Centro, California 92243

DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR MESQUITE MINE EXPANSION, BRAWLEY, CALIFORNIA, SCH# 1998121054

Dear Mr. Heuberger:

The Department of Toxic Substances Control (DTSC) has received the DEIR for the above mentioned Project. Based on the review of the document, the following are DTSC's comments:

13-1 1) For all contaminated areas within the Project Site, the DEIR needs to evaluate whether conditions at the site pose a threat to human health or the environment.

13-2 2) If during construction of the project, soil or groundwater contamination is suspected, construction in the area should stop and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil or groundwater currently exists, the DEIR should identify how any required investigation and/or remediation will be conducted, and which government agency will provide appropriate regulatory oversight.

If you have any questions, please contact Ms. Jessy Philip, Project Manager, at (818) 551-2174 or me at (818) 551-2877.

Sincerely,

Harlan R. Jeche

Harlan R. Jeche
Unit Chief
Southern California Cleanup Operations - Glendale Office

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RESPONSE TO COMMENT LETTER FROM CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCE CONTROL, SIGNED BY HARLAN R. JECHE, DATED NOVEMBER 13, 2000

Response to Comment 13-1:

The areas associated with pit expansions and OISA development consist largely of generally undisturbed, open space, desert landscape that has never been inhabited, had prior industrial use or was used for past waste disposal. In these areas there is no known or suspected contamination.

The only area of the expansion in which there has been past industrial uses is the Southeast extension of the Big Chief pit. This area is currently occupied by the Mesquite Mine warehouse, engineering offices, fuel and lubricant storage areas, as well as the normal portion of the Vista Heap leach pad. These facilities are operated in accordance with existing permits and do not pose a threat to human health and the environment.

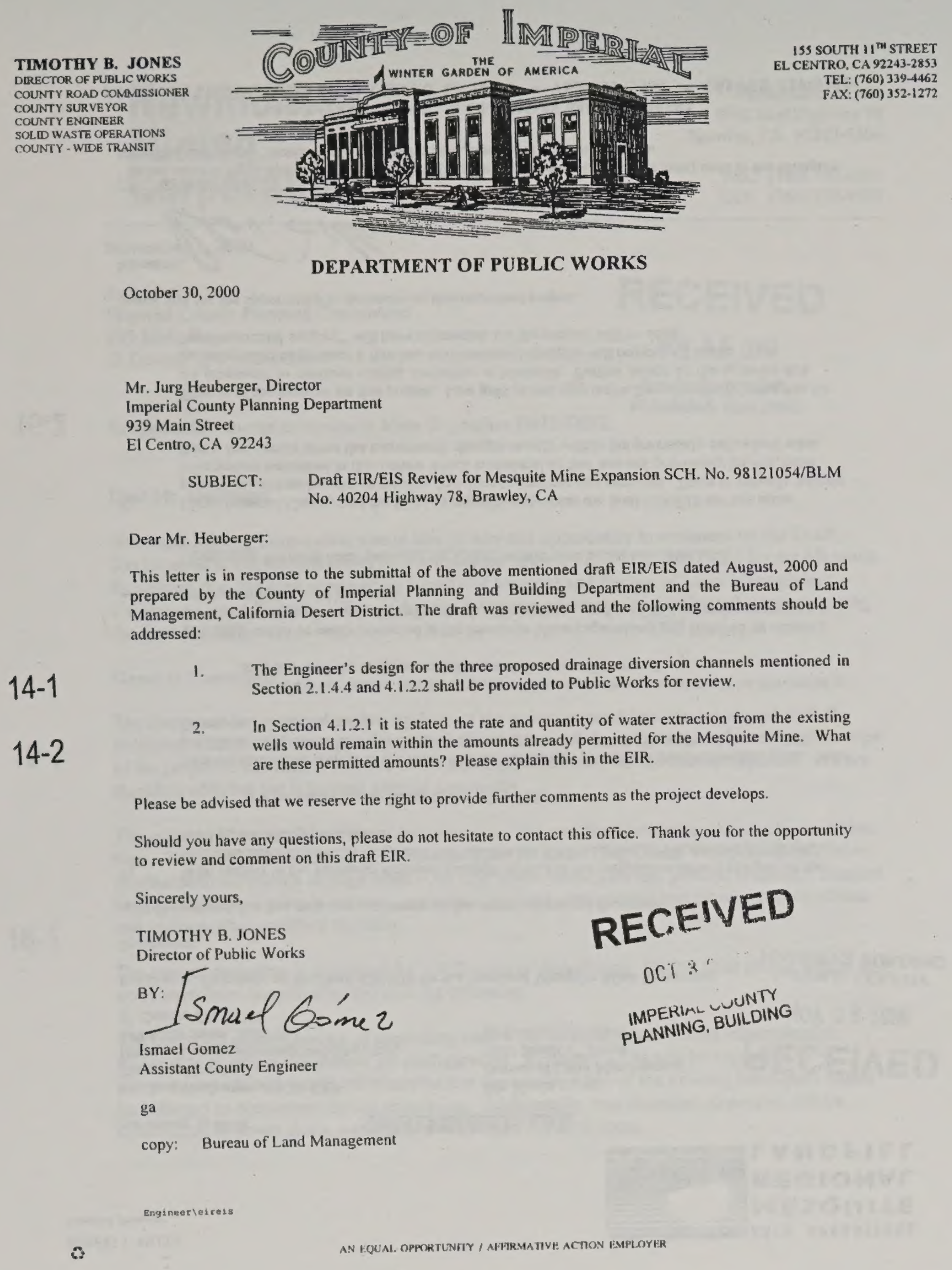
Regular monitoring of groundwater from a network of groundwater monitoring wells confirms the lack of groundwater contamination. The monitoring will continue throughout the period of mine expansion in accordance with existing Water Board permits.

Response to Comment 13-2:

If during project construction soil contamination is suspected, construction will stop. The site will be evaluated to confirm the presence of contamination and determine the extent. Appropriate remedial action will be undertaken to effect clean up and remediation of the contaminated area. Specific measures to be undertaken will depend on the nature and extent of contamination. Regulatory oversight would be provided by Imperial County Department of Health Services/ Division of Environmental Health Services, Regional Water Quality Control Board and Bureau of Land Management.

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Mr. Guenther W. Moskat, Chief
Planning and Environmental Analysis Section
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806



TIMOTHY B. JONES
DIRECTOR OF PUBLIC WORKS
COUNTY ROAD COMMISSIONER
COUNTY SURVEYOR
COUNTY ENGINEER
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COUNTY - WIDE TRANSIT

COUNTY OF IMPERIAL
THE WINTER GARDEN OF AMERICA

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DEPARTMENT OF PUBLIC WORKS

October 30, 2000

Mr. Jurg Heuberger, Director
Imperial County Planning Department
939 Main Street
El Centro, CA 92243

SUBJECT: Draft EIR/EIS Review for Mesquite Mine Expansion SCH. No. 98121054/BLM No. 40204 Highway 78, Brawley, CA

Dear Mr. Heuberger:

This letter is in response to the submittal of the above mentioned draft EIR/EIS dated August, 2000 and prepared by the County of Imperial Planning and Building Department and the Bureau of Land Management, California Desert District. The draft was reviewed and the following comments should be addressed:

14-1 1. The Engineer's design for the three proposed drainage diversion channels mentioned in Section 2.1.4.4 and 4.1.2.2 shall be provided to Public Works for review.

14-2 2. In Section 4.1.2.1 it is stated the rate and quantity of water extraction from the existing wells would remain within the amounts already permitted for the Mesquite Mine. What are these permitted amounts? Please explain this in the EIR.

Please be advised that we reserve the right to provide further comments as the project develops.

Should you have any questions, please do not hesitate to contact this office. Thank you for the opportunity to review and comment on this draft EIR.

Sincerely yours,

TIMOTHY B. JONES
Director of Public Works

BY: Ismael Gomez

Ismael Gomez
Assistant County Engineer

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ga

copy: Bureau of Land Management

Engineer\eireis

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

RESPONSE TO COMMENT LETTER FROM COUNTY OF IMPERIAL, SIGNED BY ISMAEL GOMEZ, DATED OCTOBER 30, 2000

Response to Comment 14-1:

A copy of the engineering report *Hydrologic/Hydraulic Analysis for North Cholla Pit and East Rainbow Pit Diversion Ditches*, April, 1998, prepared by James Hanson, Professional Engineer, has been provided to Imperial County Public Works for review (letter to Ismael Gomez, dated January 10, 2001).

Response to Comment 14-2:

As stated in the DEIR/EIS, page 3.2-15, the Mesquite Mine well field is approved for use of up to 4,033 acre-feet of water per year, as specified in Imperial County CUP No. 684-84.

ROBERT T. FILLER
General Manager

ARID OPERATIONS
MESQUITE
REGIONAL
LANDFILL

November 2, 2000 **DELIVERED VIA FAX**

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Mr. Jurg Heuberger, AICP, CEP
Planning Director
Imperial County planning/Building Dept.
939 Main Street, Suite B-1
El Centro, CA 92243

Mr. Kevin Marty
Bureau of Land Management
1661 South 4th Street
El Centro, CA 92243

Reference: Comment on the Draft EIR/EIS for the Proposed Mesquite Mine Expansion

Gentlemen:

Arid Operations, Inc. has only two comments on the above referenced document.

1) With respect to the Mesquite Regional Landfill (MRL) in the cumulative effects analysis of the *Mesquite Mine Expansion Draft EIR/EIS, section 4.4.3.5 Visual Resources,* second paragraph, (p. 4.4-14), the statement is made:

> "There would be no change to the Mine OISA's."

15-1 This statement is incorrect as the MRL will use substantial portions of the overburden[1] piles. Note the statement in the *MRL Final EIS/EIR, section 2.1.4.1 Landfill Segment Development; Soil Borrow Material Sources* (p. 2-20):

> "All of the ore residue and the majority of the overburden material could be eliminated as they are used for daily, intermediate, and final landfill cover."

This issue could be easily corrected in the Mesquite Mine Expansion Final EIR/EIS by deleting the incorrect sentence, and adding the words, "Over time...and the OISA's" to the preceding sentence which would then read,

"*Over time*, the heap leach pads *and the OISA's* would thus become smaller..."

2) I urge Imperial County and the BLM to expeditiously issue the final EIR/EIS for this mine expansion, and make your respective decisions to approve this proposal. There is virtually no new information contained in this review which is material or that was not previously known, other than a few details about the incremental changes mostly within the previously authorized mine area. 15-2

Time is of the essence for this project. Low gold prices may make it economically infeasible for the proponent to continue mining operations at Mesquite. Further delays by the agencies in a quixotic effort to produce a flawless environmental analysis will remove all doubt. Your "environmental surgery" will have succeeded, but the patient will be dead.

Thank you for the opportunity to comment on this important project.

Sincerely,

Robert T. Filler

---

[1] In the context noted above, the terms "OISA" (overburden/interburden storage area) used in the Mesquite Mine document and "overburden" used in the MRL document are synonymous.

ARID OPERATIONS INC., A GOLD FIELDS GROUP COMPANY
444 S. 8TH STREET, SUITE B1, EL CENTRO, CA 92243 • 760-337-5552 • FAX 760-337-9128

RESPONSE TO COMMENT LETTER FROM ARID OPERATIONS, MESQUITE REGIONAL LANDFILL, SIGNED BY ROBERT T. FILLER, DATED NOV. 2, 2000

Response to Comment 15-1:

The Final EIR/EIS has been revised to incorporate the recommended change. OISAs will be used for landfill cover under the Mesquite Regional Landfill Plan.

Response to Comment 15-2:

Commentor's support for the proposed project is noted. No response is required.

Newmont Mining Corporation

Mesquite Mine
6502 East Highway 78
Brawley, CA 92227-9306

TEL: (760) 352-6541
FAX: (760) 352-8057

November 3, 2000

Jurg Heuberger
Imperial County Planning Department
939 Main Street
El Centro, CA 92243-2856

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PLANNING, BUILDING

Subject: Comments to Mesquite Mine Expansion DEIS/DEIR

Dear Mr. Heuberger,

Newmont Mining Corporation would like to take this opportunity to comment on the Draft Environmental Impact Statement / Environmental Impact Report (DEIS/DEIR) for the Mesquite Expansion that has been prepared by County of Imperial and Bureau of Land Management – California Desert District. We ask that the following comments be considered when preparing the final EIS/EIR.

General Comments

The document is a comprehensive analysis of the environmental impacts associated with the proposed Mesquite Mine expansion. We believe that for the average reader; however, the scope of the proposed expansion, relative to the existing project may not be readily apparent. We are therefore offering the following general comments.

The existing Mesquite Mine began operations in 1985 and has operated continuously since that time. The project currently consists of three open pit mines (Big Chief, Vista, Rainbow), nine overburden/interburden storage areas (OISAs), seven leach pads and process facilities. Support facilities include a mine laboratory, maintenance shops, engineering and administrative offices and various other ancillary facilities.

16-1

The current operation is permitted for 4,962 acres of disturbance. Of this total permit area, 3,655 acres have been disturbed by the existing operation.

The proposed action consists of expanding two of the existing pits to access mineralization adjacent to or below the present pit configuration. Existing OISAs will be expanded to accommodate mined overburden/interburden material and one of the existing leach pads would be enlarged to accommodate ore processing. Additionally, two diversion structures will be constructed to divert storm water flows away from the mine areas.

RESPONSE TO COMMENT LETTER FROM NEWMONT MINING CORP., SIGNED BY DENNIS P. LAYBOURN, DATED NOVEMBER 3, 2000

Response to Comment 16-1:

This comment from the project proponent provides an alternative summary of the project description, based on the same information as contained in Section 2.1 of the DEIR/EIS. No response is required.

As summarized in the DEIS/DEIR (Table 2.1-1), the proposed expansion will affect approximately 693.3 acres. Of this total, 332.7 acres (approximately 48%) has been previously permitted. The leach pad expansion area (91.6 acres); for instance, is fully permitted. A Section 7 consultation has been completed for this area and desert tortoise compensation lands have been transferred to BLM. In addition to this permitted acreage, an additional 171.1 acres (approximately 25% of the proposed expansion) has been disturbed as part of the existing, permitted mine operation. This area, which encompasses the proposed South and Southeast expansion of the Big Chief Pit and the Vista Diversion channel, is currently the location of the mine maintenance shop/warehouse area and portions of the Vista leach pad.

16-1 (cont'd.) In summary, 503.8 acres of the of the 693.3 acres of the expansion (73% of the area) is currently permitted for mine disturbance. The proposed expansion will result in increasing permitted disturbance at the Mesquite Mine by 189.5 acres. In other words, the expansion will result in increasing the permitted disturbance at the Mesquite Mine by less than 4%. Even with the expansion, the total area of surface disturbance at Mesquite will be less than the current permitted disturbance.

The Mesquite Mine is a fully permitted, operating mine. Regulatory approval of the mine expansion would result in extending the life of the mine by approximately six years. Major operating permits, including the site air permit (Permit to Operate 1920B-9), issued by Imperial County APCD, and the Waste Discharge Order (Order No 95-016) issued by Colorado River Basin Regional Water Quality Control Board, are in place and would require no revisions in order to proceed with the proposed expansion. The proposed expansion will involve no significant operational changes from what is currently permitted. For instance:

- Planned mining rates for the expansion will not exceed the currently permitted mining rates of 60 million tons per year, specified by the Permit to Operate. Ore crushing will not be conducted.
- Groundwater withdrawal rates will remain well below the permitted levels of 4,033 acre feet per year.
- Heap leach processing of ore will continue as currently permitted.
- A program of environmental monitoring (air, groundwater, storm water) will continue at the site.

Mitigation Measures – Desert Tortoise

16-2 Tortoise mitigation measure #25 (page S-25) states that "Project structures/design will minimize the potential for raven nest or perch sites and no mining features (e.g. other buildings, power/water line enhancements, etc.) beyond the scope of the currently proposed action shall be approved or authorized."

RESPONSE TO COMMENT LETTER FROM NEWMONT MINING CORP., SIGNED BY DENNIS P. LAYBOURN, DATED NOVEMBER 3, 2000 (continued)

Response to Comment 16-2:

The use of electric shovels and drills to minimize potential air emissions was addressed in the DEIR/EIS in Section 4.1.8. The lines would be an extension of the mine's existing power distribution grid and no significant environmental impact of such power lines is anticipated. The power lines to serve the equipment will be located in areas of existing disturbance, along existing access roads and within the mine pits. No new environmental impacts would result from installation of these power lines.

16-2 (cont'd.) In order to reduce combustion-related air emissions associated with the proposed expansion, Newmont has proposed using an electric shovel and drills in place of the some of the existing diesel-fired equipment (page 4.1.8-2). This will require extending overhead power lines from the mine's existing power grid to active mine areas in the Big Chief and Rainbow pits. These power lines would occur in areas of existing mine disturbance. Although not specifically mentioned in the DEIS/DEIR, installation of the power lines should be considered part of the scope of the proposed action and; as such, would not be prohibited by the proposed tortoise mitigation measure.

Air Quality

16-3 The analysis of air quality impacts is exhaustive, considering that the proposed action represents a relatively modest expansion of an existing operation. Importantly, the analysis for PM_{10}, a nonattainment pollutant in Imperial County, indicates no significant impacts. This conclusion is consistent with past air modeling exercises that have been conducted at the site. The finding of no significant impacts assumes appropriate dust control measures are undertaken at the site. These measures, including watering of haul roads, using chemical dust suppressants and use of appropriate enclosures and baghouses, are currently practiced at the site. PM_{10} monitoring will continue at the site to insure compliance with PM_{10} standards.

Waters of the United States

16-4 The discussion of Waters of the United States (Section 3.2.2.1) mischaracterizes the definition of "Waters" contained in the 33 CFR 328.3. While the discussion is correct in including "intermittent watercourses" (33 CFR 328.3(a)(3)) and "tributaries to such watercourses" (33 CFR 328.3(a)(5)) in the broad definition of waters, the section incorrectly states that intermittent watercourses and isolated waters are one in the same. Additionally, page 3.2-4 states that "Isolated Waters of the United States" includes "All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use degradation, or destruction of which could affect interstate of foreign commerce …". This citation (33 CFR 328.3(a)(3) is actually part of the definition of *Waters of the United States.* It is important to note that there is no reference to "isolated waters" in this definition. Therefore, the references to isolated waters should be removed from the second full paragraph of page 3.2.4. Also, the final reference in the paragraph should be 51 FR 41217.

Intermittent streams (streams that experience seasonal flows) may or may not be isolated. The dry desert washes of the Mesquite Mine area would be considered ephemeral (experiencing flows only during or immediately after precipitation events) and isolated.

RESPONSE TO COMMENT LETTER FROM NEWMONT MINING CORP., SIGNED BY DENNIS P. LAYBOURN, DATED NOVEMBER 3, 2000 (continued)

Response to Comment 16-3:

Dust control mitigation measures that address potential air quality impacts are listed in Sections 4.1.8.2 and 4.1.8.6 (pp. 4.1.8-10, 4.1.8-19, 4.1.8-44). These include all of the continuing mitigation measures listed in this comment. No change to the DEIR/EIS document is required.

Response to Comment 16-4:

The requested changes to the identified text have been made in Errata page 13. Please also see the Responses to Comments 2-5 through 2-14.

Biological Resources

Overall, the section on Biological Resources represents a thorough analysis of project impacts to vegetation and wildlife. We have several concerns; however, that are outlined below.

Vegetation

The document lists several "Special Interest" plant species that would be impacted by the proposed expansion. These plants are: fairy duster (*Calliandra eriophylla*), slender lobed 4 o'clock flower (*Mirabilis tenuiloba*), winged cryptantha (*Cryptantha holoptera*) and ribbed cryptantha (*Cryptantha costata*). The analysis of environmental consequences (Section 4.2.3)

concludes that impacts to the four plant species would be significant. With appropriate mitigation, the consequences are reduced to less than significant. We question the logic of determining the level of impacts for three of the four species.

The fairy duster is included on List 2 by the California Native Plant Society (CNPS). This list includes plant species that are considered by CNPS to be rare, threatened or endangered in California, but more common elsewhere. The plant was identified in three of the expansion areas during biological surveys. The level of significance for the fairy duster is based on a loss of individual plants and associated habitat and may be appropriate.

16-5

The remaining three species of special interest plants are included on CNPS List 4, the lowest level of concern designated by CNPS. This listing includes plants that are of limited distribution in California. Included plant species are not considered rare from a statewide perspective and their vulnerability or susceptibility to threat is low at this time. Neither the slender lobed 4 o'clock flower, winged cryptantha nor ribbed cryptantha were observed during field surveys of the site and determination of impact is based solely on loss of potential habitat.

We question how the impact to these plant species can be considered significant. Based on NEPA and CEQA guidelines, an impact to vegetation would be significant if it could :

- Substantially diminish habitat for the species
- Substantially affect a threatened, endangered or special interest species or its habitat

Since the plants have not been observed on site, there is no direct, substantial impact on the species as the result of the proposed expansion. Likewise, surface disturbance associated with the expansion will not substantially diminish or affect habitat for the species. The habitat disturbed by the expansion is not unlike thousands of acres of desert habitat surrounding the site (that may or may not contained the plant species in question). We believe that impacts of the

RESPONSE TO COMMENT LETTER FROM NEWMONT MINING CORP., SIGNED BY DENNIS P. LAYBOURN, DATED NOVEMBER 3, 2000 (continued)

Response to Comment 16-5:

Although three of the listed special-interest plants (Slender-lobed 4 O'clock flower, Winged cryptantha and Ribbed cryptantha) were not observed on site within the proposed expansion areas, the DEIR/EIS describes that suitable habitat is present for the species. It is possible that weather conditions have not been conducive to growth of these plants in the period prior to field surveys for the plants, and that their seeds are only awaiting adequate moisture. Since these plants are classified as "special-interest" plants present in the general area, and since habitat suitable for them has been positively identified, the DEIR/EIS proposes that impact to them be considered significant. No mitigation measures beyond those that Newmont has committed to undertake are required, only implementation of the Reclamation Plan.

proposed project to the slender lobed 4 o'clock flower, winged cryptantha and ribbed cryptantha are less than significant.

Mammals – Bat Species

The discussion on the impacts to bat species identifies seven species of bats that could potentially be impacted by the proposed project (Section 4.1.3). There is no roosting habitat within the expansion area and impacts to bats would result from the loss of microphyll woodland habitat which serves as foraging habitat for bats. The document concludes that impact to bats would not be significant.

As part of the biological survey, several abandoned mines in the surrounding area were examined for bats or potential bat roosting habitat. One mine, located approximately 2 miles north of the Mesquite site, was found to contain a small maternity roost of California leaf-nosed bats (*Macrotus californicus*) and California myotis (*Myotic californicus*). This was is the only identified bat roosting site within a reasonable foraging distance (less than 3 miles) from the Mesquite site. A second mine that was visited, located approximately six miles from the site, contained these two bat species as well as western pipistellus (*Pipistrellus hesperus*) and pallid bats (*Antrozous pallidus*). This proposed project is probably outside the foraging range for bats inhabiting this roost.

16-6

The document lists five additional species of bats that presumably could be impacted by the project: greater western mastiff bat (*Eumops perotis*), southwestern cave myotis (*Myotis velifer brevis*), small footed myotis (*Myotis ciliolabrum*), spotted bat (*Euderma maculatum*) and Townsend's big-eared bat (*Corynorhinus townsendii*). It is unclear why these species of bats are included in the discussion of project impacts. No roosting areas are known either on site, or in the immediate area, and there is no evidence that the bats use the area for foraging habitat. In particular, two of the bat species, the small footed myotis and the spotted bat, have never been recorded in Imperial County (NECI Biological Report, 2000). We believe that in order to include these bat species in the impact analysis, there should be; at least, some reasonable likelihood that the bats either roost in the area or utilize the site, or surrounding area, for foraging habitat. Even though the impacts are concluded to be not significant, including the bats in the impact analysis would seem to imply some level of project impact. We believe that the five bat species indicated above should not be included in the impact analysis.

Thank you for the opportunity to comment on the DEIS/DEIR.

Sincerely,

Dennis P. Laybourn
Senior Environmental Engineer

RESPONSE TO COMMENT LETTER FROM NEWMONT MINING CORP., SIGNED BY DENNIS P. LAYBOURN, DATED NOVEMBER 3, 2000 (continued)

Response to Comment 16-6:

The identification of habitat suitable for foraging by the five listed bat species was identified in the course of discussions between BLM biological personnel and NECI. As noted in the comment, potential impacts to these species were found to be less than significant, and the reasons for that conclusion described. Including these bats in the document does not "imply some level of project impact," as posited by the commentor, but rather that impacts to these species were initially thought possible, but were rejected after analysis.

THE DESERT PROTECTIVE COUNCIL, INC.
A NON-PROFIT ORGANIZATION

P.O. BOX 3635 • SAN DIEGO • CALIFORNIA 92163-1635

FAX 760-337-4490

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ADVISORY PANEL

SYLVIA BROADBENT
Professor of Archaeology

EORGE W. COX
Conservation Ecologist

ETE DANGERMOND
Park Consultant

ARY DEDECKER
Botanist

ETTY FORGEY
Desert Tortoise Activist

ICHAEL FROME
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Bureau of Land Management
1561 South 4th Street
El Centro, CA 92243

COMMENTS ON THE Mesquite Mine Expansion DEIS/EIR
Imperial County, California
SCH. NO. 98121054/BLM No. 40204

17-1 Of concern is the disparity between the BLM's October 31, 2000 comment deadline and Imperial County's public hearing on January 10, 2001. Comments on this document should be coincidental, NOT more than two months apart.

The Desert Protective Council, therefore requests the right to submit its final comment on the Expansion DEIS until after the County's hearing/s (if continued.)

17-2 Furthermore, the DPC would appreciation information and a public statement as to the liability of the BLM, Imperial County and private land owners of lands within the Expansion area in the event of a missed-target episode in the Chocolate Mountains Aerial Gunnery Range.

The same situation now applies at the north end of the Gunnery Range with the Eagle Mountain trash train and land exchange.

Respectfully submitted,

Harriet Allen
Harriet Allen, DPC Southern
Desert Representative

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c: Jurg Heuberger, Planning Director
Imperial County
939 Main Street
El Centro, CA 92243

RESPONSE TO COMMENT LETTER FROM THE DESERT PROTECTIVE COUNCIL, SIGNED BY HARRIET ALLEN, DATED OCTOBER 30, 2000

Response to Comment 17-1:

The reason for the initial comments deadline was so that any comments on the DEIR/EIS could be addressed, and incorporated into the Final EIR/EIS. The latter document is the one that, under CEQA, the County of Imperial must utilize in its deliberations regarding approving or denying the permits for which it is responsible. DPC can, of course, submit comments at the County's public hearing. DPC also submitted a subsequent letter that is included in this document, and for which responses to specific comments and questions are provided. (See Comment Letter #26.) DPC will also have the opportunity to comment on the Final EIS, prior to BLM's Record of Decision.

Response to Comment 17-2:

According to MCAS Yuma personnel (report of conversation, Ron Pierce, 3/1/01) Chocolate Mountains Gunnery Range targets are not permanent, but are moved or put in different places according to the situation. And because many different types of "weaponry" may be used, the standards are calculated for a given assignment. The standard for risk assessment for the escapement or effects of an escapement from the range boundary is 10^{-6} (1 in 1 million). Liability of a missed target episode during bombing exercises in the CMAGR that might affect the mine, rests solely on the USMC.

California Native Plant Society

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October 29, 2000

Bureau of Land Management
1661 South 4th Street
El Centro, CA 92243

RE: Mesquite Mine Expansion

To Whom It May Concern:

The California Native Plant Society has long been concerned with the protection of one of our nation's least disturbed and most primeval landscape: Eastern Imperial County. From the Algodones Dunes to the Chocolate Mountains, from Indian Wash to Unnamed Wash, far southeastern California is a splendorous example of the vanishing West.

18-1 Imperial County should want to maintain this unique wonder and BLM must assure that multiple use does not lead to the diminishment of threatened, endangered or sensitive species. While the expansion of Mesquite Mine is a small project on the face of the huge desert, no one knows the degree of impact of a sensitive plant species named *Calliandra eriophylla*, or fairy duster.

Additional comments below:

Page 3.3-6 Microphyll Woodland.
18-2 The description of the microphyll woodland community does not reflect the species found in the Baseline Vegetation Survey, where there was no smoke tree (*Psorothamnus spinosus*) in the survey areas.

Page 3.3-6 Creosote/desert pavement
18-3 The scientific name for many-headed barrel cactus is misspelled.

Figure 3.3-1 - Existing Vegetation Communities
18-4 This vegetation map does not reflect the vegetation maps presented in the Baseline Vegetation Survey (Appendix B, Figures 4-1 through 4-4)
18-5 The "black outlined" areas are not named, so it is hard to correlate these areas with the text discussion.

Page 3.3-9 - Proposed Expansion Areas
18-6 It would be helpful if the acreage of each type of plant community be included for each proposed expansion area.

Page 3.3-10 - Wildlife
18-7 The reference for the statement "The proposed site is not identified as part of a known or probable wildlife corridor (Imperial County, 1993b)" is not found in the reference list in chapter 8. Please provide.

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Page 3.3-14 – Species Not Observed On-site but Could Occur
18-8 A document entitled "NECI Biological Report (2000)" is mentioned (top paragraph of page) but no reference is cited. Please clarify and cite properly.

Dedicated to the preservation of California native flora

RESPONSE TO COMMENT LETTER FROM CALIFORNIA NATIVE PLANT SOCIETY, SIGNED BY STEVE HARTMAN, DATED OCTOBER 29, 2000

Response to Comment 18-1:

The U.S. Fish and Wildlife Service and California Department of Fish and Game have been active participants in discussions regarding this proposed project. The Biological Opinion (1-6-92-F-22R3) under provisions of the Endangered Species Act has been completed. All mitigation measures identified by the Service have been incorporated into the Mine Plan of Operations and the Reclamation Plan, in order to preclude the" diminishment of threatened, endangered or sensitive species." BLM will consider all project-related recommendations in preparation of the Record-of-Decision.

Response to Comment 18-2:

The description of microphyll woodlands is general for this desert region in California, and as such, is accurate. The smoke tree (*Psorothamnus spinosa*) is one of the small trees in microphyll woodland in the desert region in the vicinity. However the specific washes within the immediate area of the mine expansion site contained no smoke trees in the microphyll woodlands. The baseline study is accurate, and will be used as the basis for reclamation.

Response to Comment 18-3:

The scientific name for the many-headed or cotton-top cactus is *Echinocactus polycephalus var. polycephalus*. The name in the DEIR/EIS was a misprint.

Response to Comment 18-4:

Vegetation maps in the baseline vegetation survey are more detailed and specific to the expansion areas. In contrast, the map in Figure 3.3-1 is a generalized map for the entire mine site. The detail of the baseline maps would not be appropriate at the scale represented in Figure 3.3-1. The "black outlined area" on Figure 3.3-1 are areas of the proposed mine expansion. These areas have not been individually identified on this figure in order that the distribution of the various vegetation types is readily apparent. The expansion areas are identified on numerous other figures in the DEIR/EIS. Also the 'black outlined' areas represents the mapping boundaries of Figures 4-1 through 4-4 in Appendix B.

Response to Comment 18-5:

Each of the identified Figures depicts detailed vegetation patterns within the areas proposed for new mine expansion disturbance. Each area is named in the Figure title, except for the graphic on page 13, where the title (Vegetation Types on the East Rainbow OISA) and the figure number (4-3) were inadvertently omitted. Areas of color, bounded by black lines, depict the identified areas of various vegetation communities, as shown by the figure legends.

RESPONSE TO COMMENT LETTER FROM CALIFORNIA NATIVE PLANT SOCIETY, SIGNED BY STEVE HARTMAN, DATED OCTOBER 29, 2000 (continued)

Response to Comment 18-6:

Acreages of plant community type by proposed expansion area are shown in Table 1 of the Biological Report, Proposed Expansion, Mesquite Gold Mine, Imperial County, California, prepared by Nevada Environmental Consultants, Inc. (NECI), 2000. That table is reproduced here.

Table 1. Summary of Potential Disturbance for Vegetation Types (acres)

Expansion Area	Total Acres	Microphyll Woodland	Creosote/ Desert Pavement	Upland Succulent	Previously Disturbed Areas
North Extension	51	8	10	18	15
North Drainage Diversion	45	7 (+15)*	32	6	0
Proposed East Rainbow North OISA	22	1	21	0	0
East Drainage Diversion	33	7	25	0	1
East Rainbow Extension	126	9	113	0	4
East Rainbow South OISA	132	12	120	0	0
Leach Expansion	92	23	59	0	10
Big Chief West OISA	21	0	0	21	0
totals	**522**	**67 (+15)***	**380**	**45**	**30**

* 15 acres of Microphyll woodland will be disturbed south of this area as a result of water being diverted.

Response to Comment 18-7:

The "b" in the reference "Imperial County, 1993b"was a typographical error. Without the "b", the reference is correct, and refers to the 1993 *Draft Imperial County General Plan Update*.

Response to Comment 18-8:

The correct citation is Nevada Environmental Consultants, Inc. (NECI), 2000.

Page 4.1.3-5, Table 4.1.3-1

18-9 Very confusing last 3 lines. It is understandable how the 59 acres is derived (44 direct, and 15 acres indirect), but how is the "Acreage requiring mitigation per BLM (b)" derived? If 23 acres of the 82 acres of microphyll woodland were previously permitted, that leaves 59 acres to mitigate…why only 35 required by the BLM?

18-10 Page 4.1.3-6, Table 4.1.3-2

North Exten. Big Chief Pit - the total CDFG Jurisdiction (not permitted) is not correctly calculated.

Page 4.1.3-12 Fairy Duster (*Calliandra eriophylla*)

18-11 Second sentence - "Fewer than 20 individuals were found in the proposed 'East Rainbow North Overburden/Interburden Area". On page 3.3-12, the text states that "more than 20 individuals" were found in this area. Please explain.

18-12 Third sentence - " and fewer than 23 individuals were observed within the proposed 'Leach Expansion Area." On page 3.3-12, the text states that only "20 individuals" were found in this area. Please explain.

18-13 Every project that comes along that impacts desert washes causes "significant" impact to the fairy duster. It is time for BLM to survey *Calliandra eriophylla* populations to see where they exist so that we can know exactly "how" significant are each of these incremental instances.

Baseline Vegetation Survey (Bamberg & Hanne, 2000)

Page 5 - Table 2-1

18-14 Acreages didn't correspond to the vegetation sections of the EIS
Figures 4-1 through 4-4 lacked a scale for the areas represented, so it is impossible to evaluate the acreage of each vegetation type.

18-15 Page 20 - Table 4-2

The density is not defined by area in the table, although the text indicates that it is number of plants per acre.

Appendix A

18-16 A full species list would be appropriate to document all of the species that will be impacted by the proposed action.

18-17 Impacts to the washes (microphyll woodlands) should include all of the washes in Section 5 and upstream (section 32 & 33) and the n/w part of section 15, because the project basically impacts the functioning of those washes in a natural manner by diverting them into the project. They will be fragmented like the washes in Section 8 & 17…they may have the vegetation ephemerally (like the next 100 years), but the washes have lost their ecological function, because of the hydrological alteration.

Sincerely,

Steve Hartman

Steve Hartman
Desert Conservation Chair
California Native Plant Society
6117 Reseda Blvd. Suite H
Reseda, CA 91335

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RESPONSE TO COMMENT LETTER FROM CALIFORNIA NATIVE PLANT SOCIETY, SIGNED BY STEVE HARTMAN, DATED OCTOBER 29, 2000 (continued)

Response to Comment 18-9:

Table 4.1.3-1 tabulates the acreage of microphyll woodland habitat by expansion area. The total acreage of microphyll woodland that would be impacted by the proposed action is 67 acres directly impacted and 15 acres indirectly impacted, for a total impact area of 82 acres.

This total area includes 23 acres of microphyll woodland associated with expansion of Leach Pad 6. This expansion is fully permitted and the associated disturbance has been mitigated with the transfer of compensation lands to BLM (per Biological Opinion 1-6-92-F-22). Therefore, the 23 acres of microphyll woodland associated with the leach pad expansion has been deducted from the total impact area, reducing the total area to 59 acres (44 directly impacted, 15 acres indirectly impacted).

Portions of the 59 acres of microphyll woodland have been permitted previously as part of earlier mine permitting activities. The previously permitted acres in each expansion area are indicated on the table, and total 24 acres. The BLM has determined that mitigation for microphyll woodland within these previously permitted areas would not be required. The 24 acres of direct, previously permitted acres is, therefore, subtracted from the 59 acres of direct and indirect impacts to give 35 acres of microphyll woodland requiring mitigation, per BLM.

Additional clarification is provided by Table 4.1.3-2, which segregated permitted and unpermitted acreages of microphyll woodland.

Response to Comment 18-10:

As the reader has noted, the correct calculation for CDFG jurisdiction not previously permitted is 1.84+8.00-1.68 = 8.16 acres. However, the arithmetic error in that cell was not carried over to the totals rows. The total of 25.24 acres, and 65.11 acres under CDFG jurisdiction are correct. The 8.14 acres is a typographical error, and has been corrected in the Final EIR/EIS.

Response to Comment 18-11

The numbers are correct in the impact analysis on page 4.1.3-12. The inconsistencies on page 3.3-12 can be corrected with substitution of the following sentence for the fourth sentence under Fairy Duster: "…Fewer ~~More~~ than 20 individuals were observed within the proposed "East Rainbow Overburden/Interburden" area, 5-10 individuals were observed in the proposed "East Rainbow Extension" area, and less than 23 ~~20~~ individuals were observed in the proposed "Leach Expansion" area." These changes have been made to the Final EIR/EIS.

Response to Comment 18-12:

Please see Response to Comment 18-11.

RESPONSE TO COMMENT LETTER FROM CALIFORNIA NATIVE PLANT SOCIETY, SIGNED BY STEVE HARTMAN, DATED OCTOBER 29, 2000 (continued)

Response to Comment 18-13:

Comment noted. Regional surveys for *Calliandra eriophylla* are outside the scope of this DEIR/EIS. By ensuring 1:1 replacement of impacted individuals, impacts would not be cumulatively significant.

Response to Comment 18-14:

The acreages given in the baseline report are accurate for the specific vegetation types delineated during this detailed survey. There are no corresponding acreages given in the DEIR/EIS for the general vegetation type described in the baseline report. For example, microphyll woodlands are described in the DEIR/EIS as a general conceptual vegetation type, but have been subdivided according to location, depth of wash, and species present in the baseline survey.

Response to Comment 18-15:

Densities in Table 4-2 are expressed as plants per acre for the species listed. These listed densities can be correlated with total acres of vegetation subtypes in Table 4-4.

Response to Comment 18-16:

The baseline study contains a complete species list for the perennial plants observed or collected and identified during the vegetation surveys. A full list of plant species would take years to compile since some annual species may not appear except in exceptional rainfall seasons. Periods of plentiful rainfall are rare and may occur several years apart.

Response to Comment 18-17:

Impacts to microphyll woodland associated with the mine expansion are described in Section 4.1.3.3. All impacts to washes in Section 5 are included. This includes direct impacts resulting from construction of the North Extension Diversion Channel and indirect impacts associated with wash segments located between the diversion and the Big Chief pit which will be impacted by loss of a portion of the periodic storm water flow. Washes in Sections 32 and 33 are upstream of the diversion and will not be deprived of any flows during storm events and, consequently, will not be impacted.

To: BLM/Imperial County Planning Dept.
From: Edie Harmon, 619-299-1744x8111
Re: **Draft EIR/EIS for Mesquite Mine Expansion, Imperial County CA, August 2000**

November 6, 2000

Summary and Conclusions

Althoughvoluminous, the Mesquite Mine Expansion Draft EIR/EIS is truly a disappointing
document in light of the detailed and specific questions, concerns, recommendations and information
provided by federal and state agencies during the NOI and Scoping periods. Many truly important concerns
19-1 were either ignored or overlooked. Discussion of ecological risk assessment left out so much basic
information and explanation or definitions that the summary and conclusion made little, if any, sense to this
19-2 19-3 reviewer. Where is there mitigation related to vegetation and habitat loss? OMR provided information that
19-4 was ignored. Why? Why no provisions for citizen oversight or independent monitoring? I concluded my
review feeling very sad.

19-5 Figures that depict nothing beyond the Mesquite Mine existing perimeters and proposed expansion
19-6 are woefully inadequate and are considered by many to be intentionally deceptive and/or misleading.
19-7 Cumulative impacts that consider such a small area centered on the existing mine are inadequate.
Newmont has the necessary resources to do better for the environment, and BLM and the County have the
19-8 responsibility to make sure that environmental review documents are understandable by those who review
them, and that they address the concerns of at least the state and federal agencies with responsibilities to
review those documents and make subsequent approval decisions. Yes, much of the area is already
19-9 destroyed, but it doesn't have to get even worse over the long term.

Mesquite Mine Expansion

These comments will begin with a n earlier summary of information gleaned from past environmental
review documents for various projects (mining and landfill) centered at the site and in the vicinity of the
19-10 current proposed Mesquite Mine Expansion. The closing paragraph of this section on earlier updates tries
to incorporate information from the current DEIR/EIS. Numbers don't always match up and the total of
estimated acres impacted ranges from more than 7,100 to 7,900 acres based on the sources. Nevertheless,
the cumulative direct impacts of disturbed acreage centered at the Mesquite Mine area appears to be in the
range of 11 to 12 square miles! No small acreage of mining related direct on-site impacts. There are
19-11 additional off-site impacts on adjacent, nearby and down-gradient public lands.

The area of the Mesquite Mine has been the subject of historic mining since the Spanish first arrived in the
area around 1780. Early attempts at mining were stopped as a result of conflicts with the local Native
Americans. Mining was re-established in the area after it became part of the Mexican Republic in 1823,
with more significant mining occurring after 1848, and with more widespread mining activity after the
arrival of the Southern Pacific Railroad in 1877. Mining operations in the Mesquite Mining District ceased
during World War II as required by Federal legislation and the district was not reopened to mining until the
1950s. Renewed interest in mining this area did not occur until gold prices rose and the heap leach process
19-12 was developed in the 1970s. (Final EIR/EA for the Mesquite Project, 12/84 at p. 4-49,4-50.)

The original Mesquite Mine proposal by Gold Fields Mining Corporation in 1984 projected a disturbed area of 2,300 acres with the maximum area of the pits anticipated to be 300 acres with a maximum depth of 450 feet, maximum height of waste rock piles 240 feet, and the maximum height of the leach pile 80 feet.

Within three years the Mesquite Mine had proposed an expansion to the East to be known as the VCR Project. The VCR Project included an additional 1,500 acres to be disturbed by the creation of 4 additional pits with maximum pit area of 700 acres at a maximum pit depth of 450 feet. Both environmental review

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000

Response to Comment 19-1:

The commentor here provides a broad overview statement. No response is required here, but specific responses are provided below to specific statements and questions.

Response to Comment 19-2:

Mitigation measures that address potential vegetation and habitat loss are listed on pp. 4.1.3-17 through 4.1.3-26.

Response to Comment 19-3:

It is not clear from this comment what specific information was supposed to have been ignored. A detailed response to OMR comments is provided in response to Comment Letter Number 8.

Response to Comment 19-4:

BLM is charged with management of the public lands, under the Federal Land Management Policy Act (FLPMA) and other applicable laws. BLM officials are willing to and capable of monitoring the efforts of Newmont Mining Corporation in meeting the mitigation requirements listed in this FEIR/EIS. No project-related citizen oversight or monitoring is believed to be necessary. Citizen involvement and review of BLM activities is provided in the form of 25 Resource Advisory Councils throughout the western United States. The Council applicable to this project area is the Desert Advisory Council (DAC). It is composed of 15 members with a variety of backgrounds, and is charged with advising the BLM's District Manager concerning (a) planning and management of the public land resources within the California Desert District, and (b) implementation of the comprehensive long-range plan of the management, use, development and protection of the public lands within the California Desert Conservation Area. The DAC currently includes representatives with interests in botany, wildlife, recreation, environmental protection, and renewable and non-renewable resources. In addition to the Council members, any member of the general public can attend and make comments regarding any land management issue not on the agenda. If any member of the public observes activities on the public lands that indicate damage to those lands that exceeds the limits described in this FEIR/EIS, they should make it known to the BLM's Resource Area Manager, to the Desert District Manager, or to the Desert Advisory Council. In addition, case files associated with various projects are available for review by members of the public.

Response to Comment 19-5:

No response is requested or required.

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-6:

Please see Response to Comments 18-17 and 19-36. It is not clear what impacts the writer is referring to. Relevant potential off-site impacts to water, air, visual, socioeconomic and cumulative impacts have already been addressed in the text (DEIR/EIS pages 4.1.2-10 , 4.1.8-29, 4.1.8-38, 4.1.8-39, 4.1.8-40, 4.1.11-1 through 4.1.11-10, 4.1.13-1 and 4.1.13-2, and 4.4-8 through 4.4-16).

Response to Comment 19-7:

Discussion of cumulative issues is found in Section 4.4. The comment does not recommend additional areas of cumulative impacts; therefore, no further response is possible.

Response to Comment 19-8:

Newmont resources are irrelevant to this documentation. However, the commentor's subsequent statement is correct. BLM and the County do have the listed responsibilities, and have endeavored to ensure that the resultant documents follow all NEPA and CEQA guidelines. Specific comments by the writer are addressed in the following pages as they are detailed.

Response to Comment 19-9:

This commentor's opposition to the project is noted.

Response to Comment 19-10:

It is true that the acreage of disturbance from the existing mine operation, plus the approved regional landfill, represents a considerable area. The permitted area for the existing mine totals 4,962 acres, and permits for an additional 190 acres are sought in the proposed project. This acreage is reduced to 142.2 acres in the reduced footprint alternative. It is estimated that the approved regional landfill site would require 2,240 acres, in addition to that portion of the landfill site within the permitted mine footprint. The total of these areas equals 7,392 acres, or approximately 11.55 square miles, a figure consistent with the comment regarding 11-12 square miles.

However, it must be noted that not all the lands within the permit boundaries of either the mine or the landfill will be disturbed. Approximately 3,655 acres of the mine site have been disturbed. When the projected 522 acres of additional mine disturbance resulting from this proposed project are added, and the approximately 1,600 acres of new landfill disturbance are added, the total disturbed area is projected to be approximately 5,777 acres, or 9 square miles. While this is a large area, it is not 11-12 square miles. Furthermore, the operations of the existing mine, and the planned landfill, have already been approved. The impacts of those activities have already been addressed in other environmental documents and are addressed as cumulative impacts in this FEIR/EIS.

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-11:

This statement is not supported by any specifics, or factual information. (See Response to Comment 19-6.)

Response to Comment 19-12:

Comment noted. The information appears to be correct.

19-12 (cont'd.) documents projected an estimated 20 year life of the mine. (Final EIS/EA for the proposed VCR Mining Project, 10/87 at p. 1-4,2-3.) The VCR Project proposed seven additional waste rock piles but no new heap leach piles.

19-13 By 1996 the Big Chief Pit represented "a 500-foot-deep gouge the in the desert floor" according to an Imperial Valley press interview with Voorhees, the general manager of the mine then owned by Santa Fe Pacific Gold Corporation. Santa Fe Pacific Gold is now a subsidiary of Newmont Gold Company. Newmont now proposes exploratory drilling on 657 acres located just north of the existing Mesquite Mine boundary with its Big Chief and Cholla Pits on land recently acquired by the California State Lands Commission from a Land Exchange with the Bureau of Land Management. (Reclamation Plan 97-0005 Project Description.)

19-14 It has been estimated that the acreage controlled by the past and present companies operating the Mesquite Mine include approximately 5,500 acres. The Final EIS/EIR for the Mesquite Regional Landfill (6/95) describes a 100 year, 20,000 tons/day mega-landfill to the south which includes a portion of the original Mesquite Mine on approximately 4250 acres to be operated by a partnership including Arid Operations, a wholly owned subsidiary of Gold Fields mining Corp., the original applicant and operator of the Mesquite. (Of the 4250 acres for the mega-landfill, 1750 were public lands managed by BLM, and still the subject of a contested Land Exchange.)

19-15 Thus, at the site of the existing Mesquite Mine, one expansion to the east was approved in 1987, a Reclamation Plan for exploratory drilling for a second expansion to the north is under consideration at the present time, and impacts of the open pit mining will be magnified when and if the 100 year, 20,000 tons/day already County approved mega-landfill to the south of the Mesquite Mine is constructed and operated.

19-16 Estimates of the impacted lands in the Mesquite Mine area, most of which were originally public lands managed by BLM, include the existing 5,500 acre Mesquite Mine (5,200 acres according to 8/00 Mesquite Mine Expansion (MME)DEIR/EIS), 657 acres for the proposed northward expansion (693 acres according to MME DIER), and additional 1750 acres of public lands to the south of the Mesquite Mine for the mega-landfill. This amounts to 7,907 acres (more than 7140 acres of total impact based on various data from MME DEIR) or more than 11.2 to 12.3 square miles depending on the source of figures given for acreages in the various Mesquite mine and Mesquite Landfill documents.

Mesquite Mine Expansion DEIR/EIS of 8/2000

19-17 These comments will focus on only a few issues. We have reviewed the letters from federal and state agencies in addition to the NOI questions from Sierra Club prior to reviewing the DEIR/S. Excellent questions, comments and suggestions related to water, groundwater and reclamation, revegetation, restoration issues were raised. Only implementation and long term (30-50 year) monitoring by independent sources in addition to government agencies will tell how successful mitigation measures (especially those revegetation/reclamation measures recommended by OMR) will be and how adequate bonding will be.

Water related issues

19-18 USGS division of water resources in both Santee and Carlsbad should be asked to evaluate issues related to water quality/quantity associated with pit lakes and groundwater. Similarly, BLM should contract an independent groundwater/pit lake evaluation by Dr. Tom Myers of Reno NV as requested in the NOI comments.

19-19 What is the drawdown data for well G-7 adjacent to the Big Chief and Vista pits? That information

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RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-13:

The comment relates historical background information about the Mesquite Mine. The proposed expansion would result in the expansion of existing facilities that would prolong mining operations approximately six years.

Regarding the 657 acres of State Lands Commission lands located north of the existing Big Chief mine pit, Newmont has a prospecting permit that allows exploratory drilling. An exploratory drilling program has been completed, and, as a result, Newmont has identified 96.5 acres of the State Lands on which it either wishes to mine (Big Chief North Extension), or to construct ancillary facilities (North Drainage Diversion Extension).

Response to Comment 19-14:

Comment noted. The information appears to be correct.

Response to Comment 19-15:

It is not clear what impacts the writer is referring to in their comment. Impacts of the Regional Landfill include cumulative traffic impacts along SR 78 during fall and winter weekends, cumulative air quality (PM10) impacts, and unavoidable visual impacts from proposed landform alterations. Direct and cumulative impacts of the proposed mine expansion are listed in Section 4.0 of the DEIR/EIS.

The comment states that a "Reclamation Plan for exploratory drilling for a second expansion to the north is under consideration …". It should be noted that the Reclamation Plan for the North Half Section Exploration Drilling Program was approved by the County of Imperial and the State Lands Commission as Reclamation Plan #97-005 on May 27, 1998. The plan covers reclamation associated with a proposed three phase exploration program on California State Lands north of the existing Big Chief pit, controlled by Newmont through a State Prospecting Permit. In addition to the Reclamation Plan, permitting for the exploration program also required obtaining a U.S. Corps of Engineers 404 permit and a USFWS Biological Opinion addressing potential impacts to the desert tortoise. The initial two phases of the drilling program were completed between July, 1998 and March, 1999. Phase III of the program was not conducted and may be completed in the future. The area of the north exploration drilling is encompassed by the North Extension of the Big Chief Pit, which is part of the proposed mine expansion.

The impacts of open pit will, to some degree, be lessened by the development of the Mesquite Regional Landfill. All of the detoxified leach pad residue and a majority of the overburden/interburden generated from mine activities would eventually be eliminated with full development of the landfill. This material generated from mining would be "recycled" and used for daily, intermediate and final landfill cover (see Arid Operations Comment Letter dated November 2, 2000, (letter #15).

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-16:

This comment addresses the acreage of the project site, in terms of combined impacts of the mine and landfill. The acreage of direct impacts listed by the commentator is inaccurate. (See responses to Comments 19-10 and 19-13). Direct and cumulative impacts of the proposed mine expansion are listed in Section 4.0 of the DEIR/EIS.

Response to Comment 19-17:

This documents addresses all agency questions, comments and suggestions that were received. Mitigation success, and adequacy of bond amounts will be determined, as the writer suggests, over time. Government agencies will be responsible, under law, with monitoring of the proposed mitigation measures. Specific mitigation monitoring assignments are detailed in the Mitigation Monitoring and Enforcement Reporting Program.

Response to Comment 19-18:

Baker and Associates completed, independent of Newmont Mining Corporation, an in-depth analysis of water issues at the mining site. Another study is not needed.

Response to Comment 19-19:

GW-7 is a ground water monitoring well located approximately midway between the Big Chief and Vista Pits. Figures 2-5 and 2-7A contained in Hydrologic and Geochemical Study Report for the Proposed Mesquite Mine Expansion (BCI, 1999) illustrate the estimated pre-mining and existing ground water elevations; respectively, of the Mesquite Mine area. The figures indicate a drawdown in GW-7 of approximately 30-40 feet as a result of mining activities. These figures also indicate a drawdown of approximately 200 feet and 100 feet for the Big Chief and Vista pits, respectively, as of 12/98. There is no reference to a 325-foot drawdown in the DEIR/EIS. Groundwater levels will recover to some extent at the cessation of mining, with the development of the pit lakes.

Ground water resources will be affected by the continuous loss of water from the aquifer due to pit lake evaporation. A detailed discussion of the rate of evaporative loss is included in Hydrologic and Geochemical Study Report for the Proposed Mesquite Mine Expansion (BCI, 1999). The analysis uses a lake evaporation rate of 80 in/yr. (see Response to Comment 19-24). After pit lakes reach a steady state, evaporative losses will vary from about 15 gpm to 30 gpm, depending on the pit lake.

It should be noted that the formation of pit lakes is not evaluated as an environmental consequence of the proposed action in the DEIR/EIS since it will be an existing condition at the site, whether or not the mine expansion program is conducted.

should be included in the body of the EIR/EIS text not hidden in a non-released technical appendix. The
19-19 seepage loss drawdown associated with the pits is deemed significant, even if only by its omission
(cont'd.) following mention. What does this say about the long term 50 year consequences for groundwater loss due
to pit lake evaporation (assuming the 100 inch standard pan evaporation rate usually quoted)? Text on 3.3-
11 and Fig 3.2-5 suggest a groundwater level decline approaching 325 feet as of 12/98. This decline would
potentially affect the downgradient water levels within the root zones of vegetation along the downgradient
washes and presumably is responsible (at least in part) for the death of the large ironwood trees in the
19-20 downgradient washes to the south of the mine fence. Without backfill to a level about the top of the
estimated pit lake this would represent a substantial water loss through pit lake filling and evaporation.
19-21 This seems unacceptable in such an arid area.

What is the potential that long term (50 years in the future) impact of degraded quality from
evaporation of large pit lakes will have on avian and bat use of the area? Does this also represent an area
19-22 for mosquito breeding and the associated health impacts from a new mosquito breeding area in an era of
global warming and the advance of insect borne tropical diseases? What efforts would be taken to prevent
19-23 the establishment of tamarisk along pit lakes? (San Felipe Creek has steep walls covered with tamarisk.)
What is the estimated long term water quality if pit lakes are not backfilled? Pit lake water quality will
19-24 differ if the 80 inch/yr vs 100 inch /yr evaporation rate is used.

Re Fig. 3.2-5, the legend should state whether water levels are those for depth to water in feet below
19-25 land surface or as water level in feet above mean sea level. It was not possible to read the blue numbers on
top of the dense grey/black base map in the vicinity of pit lakes.. What was the quality of the water in each
19-26 of the pit lakes prior to 1997? Why isn't this included? How frequently is pit lake water quality
monitored, by whom, and to whom are the reports sent?

Mitigation measures related to pit lakes make no mention of efforts to preclude birds and wildlife
19-27 from using the contaminated waters of the pit lakes as water sources (S-12, S-28), nor are they clear in the
Ecological risk Assessment at p. 4.1.308 to 3-10.. What measures will preclude such use? What are the
19-28 long term (50 year) groundwater quantity/water level impacts from allowing the pit lakes to remain and
"pull in" groundwater from the surrounding areas? How will the resulting decline in groundwater levels
19-29 impact downgradient microphyll vegetation whose roots reach far below the washes along which they
grow? How will this impact on vegetation affect the quality of habitat and microclimate for wildlife and
19-30 birds in the area?

There should be backfill to preclude the formation of pit lakes and to reduce the amount of water
that migrates from surrounding undisturbed areas. By backfilling to a level above that which would
19-31 become a pit lake, not only is volume of water to fill the void reduced and avoid wildlife and bird uptake,
but evaporation is also reduced. This would result in a significant benefit to the down-gradient
groundwater resources and ultimately to the potential quantity and quality of microphyll vegetation and
19-32 habitat for wildlife and birds. Reducing groundwater losses, reducing long term potential habitat
degradation should result in microclimate improvement in areas that fall within the shadow of microphyll
vegetation well beyond the washes themselves. The benefit of long shadows and wind break effect of
microphyll vegetation and creosote bushes are also seen in reduced soil and vegetation water loss after the
summer rains that periodically occur in eastern Imperial County. While this may sound insignificant, these
effects are readily observed if one spends long periods of time in the Imperial County desert areas during
the worst heat of the summer.

Is pan evaporation different from "lake evaporation" (MME p. 3.2-9)? DIES states that lake
evaporation is about 80 inches/year and rainfall is about 3 inches/year (MME p. 3.2-9). However, the
19-33 recent hydrology studies for the proposed Imperial Project Mine about 10 miles away stated that rainfall on
the valley floor is about 5 inches/year and the evaporation rate is about 100 inches/year (Imperial Project
Appendix E-1 at p.5). This appears to be a significance in numerical information. Why the difference and
which is presumed correct? The areas are too close and too similar in relation to the mountains to believe

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RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-20:

Perennial trees and shrubs in the Mesquite Mine area are not maintained or affected by groundwater levels. Groundwater levels at the site vary from approximately 200 feet below surface to over 300 feet below surface. These depths to groundwater are well below the root zones of vegetation. Ironwood trees and other perennial plants along washes in the described area are undergoing a natural cycle of seedling, germination and death of older trees. The death of any one specimen of ironwood cannot be attributed to groundwater conditions or surface flows. Habitat quality is dependent on several factors, the most important of which is local climatic conditions of temperature and moisture, and topographic gradients. Groundwater levels have little or no effect on habitat quality in these desert wash ecosystems.

Response to Comment 19-21:

Please see Response to Comment 19-31.

Response to Comment 19-22:

The long term effects of the pit lake water on likely site receptors is evaluated in *Screening-Level Ecological Risk Assessment of Pit Lakes at the Mesquite Mine, Imperial County, California,* (SMI, Bamberg, 2000). The report concludes that there would not be significant risk from the drinking water pathway since the increasing salinity would eventually make the water unpalatable to wildlife. Likewise, the risk from the dietary pathway would not be significant if appropriate mitigation measures to limit the growth of vegetation along the shoreline of the pit lakes would be implemented.

Major factors which contribute to mosquito breeding include biologic pollution (high BOD) and the presence of emergent vegetation. These factors would not be prevalent in the pit lakes, especially with the proposed steep pit walls to limit vegetation near the lake shoreline. The increasing salinity of the water will also not be favorable to breeding of certain species of mosquitoes. If mosquitoes begin breeding in the pits, beneficial insects would likely become established to feed on the mosquitoes or the larvae.

Considering the remoteness of the area relative to population centers, establishing vectors for transmission of tropical disease is unlikely. If mosquitoes were to become a problem, the release of fish that feed on mosquito larva, such as *Gambusia* might be considered. Such an action would, of course, have to be approved by the appropriate agencies prior to implementation.

Response to Comment 19-23:

Tamarisk is an exotic species that is already widespread and common along the entire Colorado River system in the western and southwestern US. This species already occupies thousands of acres along the riverine systems, most often on public lands. Tamarisk is a successful invader species because each tree produces millions of seeds that are easily transported long distances by

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-23: (continued)

wind and water. These seeds readily germinate and colonize any wet areas. As such, the sources of seed are widespread and not easily controlled. Small isolated populations that develop around mine sites do not contribute significantly to the problem of reintroduction to public lands. Tamarisk will be controlled as long as the mine is operating and into the post closure monitoring period. However, due to the pervasive presence of this species on public lands, reintroduction to mine sites from public lands is inevitable after closure. The proposed steep slopes around the pit lakes should reduce the extent of tamarisk development.

Response to Comment 19-24:

The future pit lake water chemistry predicted for the Proposed Action is summarized in Table 3.3 of the Hydrologic and Geochemical Study Report for the Proposed Mesquite Mine Expansion (BCI, 1999). The data has been tabulated as part of Comment 2-2. The precipitation and lake surface evaporation rates used to make the above predictions were 2.96 inches/year and 80 inches/year respectively. The precipitation rate was based on a 47-year record measured at the Yuma, Arizona airport, and the evaporation rate was based on National Weather Service data (see National Weather Service, 1982, Evaporation Atlas for the Contiguous 48 United States, National Oceanic and Atmospheric Administration, Washington, D.C., June 1982) and U.S. Geological Survey evaporation data (see Hely, A.G. and E. L. Peck, 1964, Precipitation, Runoff and Water Loss in the Lower Colorado River-Salton Sea Area, Geological Survey Professional Paper 486-B).

Response to Comment 19-25:

The water levels in Figure 3.2-5 refer to feet above mean sea level, as is indicated in the legend. We have provided more detailed maps of the mine pit areas so that the blue numbers can be read, and have included the maps in the Errata section, (Figures 3.2-5a and 3.2-5b).

Response to Comment 19-26:

During operations, pit lakes are present intermittently. That is, when mining is being conducted in a specific pit, any accumulated groundwater is collected in sumps, pumped out and used for dust control on site haul roads. The water flowing in the pits is ground water, which is sampled quarterly from monitor wells around the site and reported to the Regional Water Board. At the cessation of mining, water will accumulate in the pits and water chemistry will evolve as a result of evaporative processes. The DEIR/EIS includes water chemistry from 1997, which could be considered a baseline chemistry for the future pit lakes. Since the pit lake chemistry has not yet been affected by the long term evaporative processes, water chemistry prior to 1997 would be very similar.

Any pit water is currently sampled on an annual basis by Mesquite environmental department personnel. Analysis are conducted at a California certified laboratory and results are submitted to Imperial County as part of the annual Conditional Use Permit report.

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-27:

Risks to birds and other wildlife from using the pit lakes as a drinking water source will not be significant. The salinity of the lakes would greatly limit the palatability, and subsequent usability of the lakes as a drinking water source. This issue is described in the Screening Level Ecological Risk Assessment and is included in the DEIR/EIS (page 4.1.3-9).

Response to Comment 19-28:

The estimated rate of ground water inflow and near steady-state pit lake surface elevation predicted for each pit lake under post-mining conditions are summarized in Table 3.2 of the Hydrologic and Geochemical Study Report for the Proposed Mesquite Mine Expansion (BCI, 1999). The combined ground water inflow to all the pit lakes is estimated at approximately 82 gpm. Assuming that consistent climatic and ground water conditions prevail, the flow rates and lake elevations are expected to be maintained from the time that the pit lakes recover to their final elevations to 50 years and beyond.

Response to Comment 19-29:

Please see the Response to Comment 19-21, above.

Response to Comment 19-30:

As noted above (Response to Comment 19-21), the localized drawdown occurring around the pits at the Mesquite Mine has little or no effect on habitat quality in the desert wash ecosystems. The depths in the area has always been well below the root zones of vegetation.

Response to Comment 19-31:

The depth to ground water in the mine area precludes backfilling of the pits as a practical alternative. This is because a great depth of backfill would have to be placed in each pit to rise above the equilibrium elevation attained by ground water within each backfilled pit. Backfilling is not an option due to prohibitive cost and the large expenditure of additional energy and fuel necessary to move large amounts of rock material. In addition, without the action of evaporative loss at the lake surface a ground water "sink" around the pits would not develop. Ground water would flow through the backfill and potentially be affected chemically while in contact with the backfilled materials.

Response to Comment 19-32:

Please see Responses to Comment 19-21 and 19-31.

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-33:

Pan evaporation and lake evaporation are different values, and the 80 inches/year lake evaporation potential described in the DEIR/EIS is not in conflict with a pan evaporation potential of 100 inches/year. Pan evaporation is typically greater than lake evaporation and the 0.8 factor difference between these two values is reasonable. Either value would be equally representative of climatic conditions at the Mesquite Mine site. The lake evaporation potential was used for the DEIR/EIS because this value is best suited to the assessment of evaporation from the pit lakes.

Average annual rainfall is estimated based on long-term records. Average annual rainfall in the site vicinity is expected to be between three and four inches based on data from four weather stations in the region (Environmental Solutions, Inc., 1992b). The DEIR/EIS referenced an average annual rainfall "on the order of 3 inches per year" based on this detailed hydrogeologic assessment of the Mesquite site, and based on work by Baker Consultants, Inc. (1999). Baker Consultants, Inc. independently concluded that the mean annual rainfall in the vicinity is approximately 3 inches based on 47 years of precipitation records from the Yuma Airport.

19-33 (cont'd.) that both sets of information are correct. The concern is for the amount of evaporation and subsequent groundwater loss through evaporation if pit lakes are permitted to remain after mine closure. If rainfall estimates are off, this impacts interpretation of wash flow off site to wash vegetation during heavy rain events. Evaporation rates will impact pit lake water quality.

19-34 Fig. 4.1.2-1 should include areas immediately adjacent to and off-site from the proposed mine and Mesquite Mine boundaries because the waters and vegetation are not known to immediately cease beyond the Mesquite Mine boundaries and because off-site impacts must be considered. Use of pretty colors in the Figure is no substitute for adequacy of information in the project vicinity!

19-35 Groundwater quality below or near 1000 (mg/l) ppm TDS should not be considered poor quality given the federal Maximum Contaminant Level of 1000 (mg/l) ppm not 500 as indicated in Table 3.2-4. Water with a quality of 1000 or less is routinely treated and used as potable water in Southern California. It is my understanding that the federal MCL standard was raised because so much of the southwest could not meet the 500 ppm MCL standard. It should be noted that Colorado River water users, including Imperial Irrigation District customers, are receiving water with a TDS in excess of 500 mg/l. Lack of existing groundwater users in the area does not mean that groundwater quality is an irrelevant concern as implied at p. 4.1.2-10.

19-36 What is the difference between complete backfill and partial backfill? The EIS discussion (at p. 4.1.3-9, 3-10) makes it sound as if there would still be a pit lake with partial backfill. However, we interpret partial backfill of the pits to mean that they would be backfilled to a level to preclude formation of open bodies of water or even water close to surface. How is it possible that wildlife and birds are at risk from the drinking water pathway (4.1.3-10?if the pits are completely backfilled and there is NO pit lake at all???

19-37 Pit lakes should be backfilled to preclude standing water, but no mention is made of this. Is the proposal that these become recreation lakes? If so, water quality is of importance because there will be potential human exposure. Or will they just become "attractive nuisances" surrounded by the invasive tamarisk? Will the area be fenced in perpetuity to keep all terrestrial mammals/humans away from the steep pit walls?

Revegetation/reclamation issues

19-38 Revegetation/reclamation mitigation should include requirements to follow the recommendations submitted by OMR. If there was such in the DEIR I could not find it.

19-39 Why does the DEIS/EIR ignore the issue of the **invasive species tamarisk** and the danger of its introduction to public lands when/if it escapes the Mesquite mine site?!!! BLM spends much time, effort and money to try to eradicate tamarisk in washes, canyons and other sensitive areas on public lands. The possibility of tamarisk out of control at the Mesquite Mine must not be ignored.

It is imperative that weed species and invasive noxious species such as tamarisk not be allowed to remain at the existing mine site or become established off site. Tamarisk eradication has not been diligently pursued by the Mesquite Mine in the past and there were large thickets and established stands at a number of sites at the Mesquite Mine when Lisa Wade took me on several tours of the mine property. Complaints were made to Mesquite's Wade, BLM and OMR. The Mine's first efforts to eradicate after my complaint met with failure because the employees failed to follow the BLM technique that was recommended orally and in writing.

Tamarisk must not be allowed to grow and become a seed source to contaminate the surrounding canyons and water sources in the Chocolate Mountains and nearby washes. Stands of tamarisk degrade habitat and deplete water sources if allowed to get established in desert mountain canyons. I recall no tamarisk in the Mesquite Mine area prior to the beginning of the Mesquite Mine operations. Monitoring and eradication following standard BLM tamarisk eradication practices must be diligently pursued and

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-34:

Only relatively small areas (shown in color) within the Proposed Plan of Operations Boundary (see Figure 2.2-1) would be excavated for a mine pit, become the site of a waste rock storage area, a leach pad expansion, or a new diversion channel. All the other areas within the Operations Boundary are either previously disturbed (shown with hatching) or are/will remain undisturbed (in white). Furthermore, nearly all of the new areas proposed for disturbance are in the northern half of the Operations area, so that more than a mile of drainage channels downgradient from the proposed new disturbance areas are within the Operations boundary (See Comment 18-17). The desert washes and associated wash vegetation extends beyond the Plan of Operations boundary; however, the intent of the figure is to illustrate direct impacts of the proposed expansion on delineated waters and microphyll woodland vegetation. It is not intended to be a regional depiction of these features. There will be no land disturbance outside the Operations boundary, and air quality and noise issues relative to that boundary have been addressed in sections 4.1.8 and 4.1.7 of the DEIR/EIS.

Response to Comment 19-35:

The referenced table (Table 3.2-4) indicates that the recommended secondary drinking water standard for total dissolved solids (TDS) is 500 mg/l. This is a correct statement (CCR Title 22, Article 16, §64449). Although the recommended maximum contaminant level (MCL) is 500 mg/l, the upper limit MCL for TDS is 1000 mg/l and the short term MCL is 1500 mg/l. California drinking water statutes state that TDS concentrations between 500 and 1000 mg/l are acceptable if it is not reasonable or feasible to provide more suitable water. TDS content between 1000 mg/l and 1500 mg/l generally requires some type of treatment to reduce mineral content. Drinking water in Imperial County, particularly when derived from surface sources, commonly has a TDS content between 500 and 1000 mg/l.

Groundwater quality in the subbasin, based on analytical data from a number of wells in the mine area, is summarized in Table 3.2-4. Of the ten wells referenced, TDS content in seven of the wells exceed the upper limit MCL, with three of the wells exceeding the short term MCL. The DEIR/EIS characterizes the ground water in the vicinity of the mine site as being of poor quality. This characterization is based on a number of constituents, in addition to TDS, that exceed the prescribed MCL. These constituents include specific conductance, fluoride, manganese, chloride and sulfate.

The DEIR/EIS does not imply that ground water quality is an irrelevant concern. Rather, a combination of factors including poor water quality, low well yield, and the lack of current (or foreseeable) beneficial users would indicate that the localized drawdown in the vicinity of the mine pits represents a less than significant environmental impact.

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-36:

Please see Response to Comment 8-9. The potential risk that such lakes may have to wildlife and birds is addressed in Section 4.1.3.3 (pp. 4.1.3-8 through 4.1.3-11) of the DEIR/EIS.

For purposes of the pit lake modeling and the subsequent Ecological Risk Assessment, two options were evaluated, the open pit option and the backfill option. The open pit option essentially encompasses the two project alternatives evaluated in the DEIR/EIS (Proposed Action, Reduced Footprint Alternative). Since the pit lakes would develop regardless of whether the mine expansion would proceed, the open pit modeling exercise also would be representative of the no action alternative evaluated in the DEIR/EIS. The Backfill Option assumes that virtually all of the overburden/interburden generated during the mine expansion would be placed in the pits rather than in out-of-pit OISA's. The backfill alternative would not result in total backfilling of the pits nor would it result in the elimination of the pit lakes. The proposed expansion would not generate sufficient overburden to completely backfill the pits Due to the chemical interaction between the backfilled overburden/interburden and pit lake water, however, the backfill alternative would have negative implications for the ultimate equilibrium chemistry of the pit lakes.

Response to Comment 19-37:

Please see Response to Comment 12-5.

Response to Comment 19-38:

Implementation of the Surface Mining and Reclamation Act of 1975 (SMARA; California Public Resources Code, Secs. 2710 et seq.) in Imperial County has been delegated to Imperial County. Imperial County reviews and considers seriously all input from the Department of Conservation, and must certify to the Director that the reclamation plan is in compliance with Article 1 of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations in effect at the time. If the Director makes comments, and the County's position conflicts with that of the Director, the County is required to prepare a written response to address, in detail, why specific comments or suggestions were not accepted. Please see Responses to Comments 8-14 that describes the revised Reclamation Plan.

Response to Comment 19-39:

Tamarisk is an exotic species that is already widespread and common along the entire Colorado River system in the western and southwestern US. This species already occupies thousands of acres along the riverine systems, most often on public lands. Tamarisk is a successful invader species because each tree produced millions of seeds that are easily transported long distances by wind and water. These seeds readily germinate and colonize any wet areas. As such, the sources of seed are widespread and not easily controlled. Small isolated populations that develop around mine sites do not contribute significantly to the problem of reintroduction to public lands. Tamarisk will

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-39: (continued)

be controlled as long as the mine is operating. However, due to the pervasive presence of this species on public lands, reintroduction to mine sites from public lands is inevitable after closure.

Early programs to control tamarisk at the Mesquite site relied heavily on mechanical techniques, which proved unsuccessful. In early 2000, BLM conducted a training session at the Mesquite site to train Mesquite personnel on proper herbicide – based eradication methods. In mid-2000, a dedicated tamarisk crew was established to eradicate the scattered stands of tamarisk that occurred at the site using BLM techniques. Following this eradication program, the focus has shifted to long term control of tamarisk at the Mine site.

The Mesquite Mine currently has an on-going program in place to control tamarisk on the site. The program utilizes the current BLM-approved methodology for tamarisk control that consists of: (1) surveying areas for the presence of tamarisk, (2) cutting the tamarisk to ground level, (3) applying an approved herbicide to the cut stump and (4) burning the cut tamarisk slash to destroy the seeds. Based on BLM recommendations, the herbicide Garlon 3A© is currently in use at the site. Garlon is a herbicide containing triclopyr, a naturally occurring plant hormone. The tamarisk control program is conducted by process personnel as part of the normal job responsibilities.

BLM personnel are aware of the tamarisk problem, and are fully capable of monitoring the Mine's progress (or lack thereof) in eradicating any tamarisk that become established. If this problem is not controlled by Newmont or its designees, BLM has the power to make other arrangements to ensure tamarisk eradication, paid for from Newmont funds. The effectiveness of the tamarisk control program is determined during regular inspections of the site by BLM, Imperial County and other agencies.

monitoring for effectiveness and compliance must be entrusted to non-mine persons because of the documented failures of the Mesquite Mine in the past.

Wildlife issues

9-40 If no more than two tortoises are to be removed to any given area, will there be attention paid to age class or sex of the animals moved? What are the criteria for who gets moved where and when? Will efforts be made to determine the ages, sexes and or health of animals in the area to which animals are proposed to be relocated? ((S-20)

9-41 I believe that the proposed mine expansion is located within the 1994 USFWS designated Critical Habitat for the desert tortoise. The boundary of designated Critical habitat should be included in fig. 3.3-2. How does the location of a proposed mine expansion within designated critical habitat for a listed species affect the compensation ratio?

A modest proposal

9-42 Newmont is not an impecunious corporation. If BLM, State and other Federal agencies and County of Imperial are not going to require meaningful mitigation and reclamation at the Mesquite mine site, then federal agencies should require that more mitigation, reclamation and compensation for environmental and cultural/social losses be made at other Newmont mining sites in the United States or at Newmont's foreign mining operations.

9-43 For a brief discussions of some of the environmental and cultural/social impacts of Newmont's mining operations at other sites, please see the recent 20 page booklet published by Project Underground entitled Newmont Poisoning Paradise: Why are people around the world so MAD at this company? A new report from Project Underground makes a compelling case. But will Newmont listen? In that booklet (at p. 7) is a piece by Quechan Tribal Elder Lorey Cachora entitled "Destruction is not progress".

Encl:
Project Underground, 2000. Newmont Poisoning paradise: Why are people around the world so MAD at this company?

RESPONSE TO COMMENT LETTER FROM SIERRA CLUB, SIGNED BY EDIE HARMON, DATED NOVEMBER 6, 2000 (continued)

Response to Comment 19-40:

Newmont is currently in consultation with BLM and USFWS to delineate tortoise relocation sites, address release conflicts and define specific protocol for moving desert tortoise. Specific procedures for moving tortoise are included in the Biological Opinion for the project and will be in the Record of Decision issued by BLM. As indicated in the DEIR/EIS, several sites will be chosen for tortoise relocation, with no more than two tortoises relocated to each area. This is being done to prevent overpopulating relocation sites with tortoises. When relocating tortoise, standard methods as outlined in Guidelines for Handling Desert Tortoises During Construction Projects (DTSC, 1994, revised 1999) will be utilized. These guidelines include methods for processing the tortoise prior to relocation. Processing includes measuring and weighing the tortoise, determining sex of the individual, assessing the general health of the tortoise and marking the tortoise. It should be noted that sex determinations may not be possible on smaller tortoises (less than 6-8 inches).

Response to Comment 19-41:

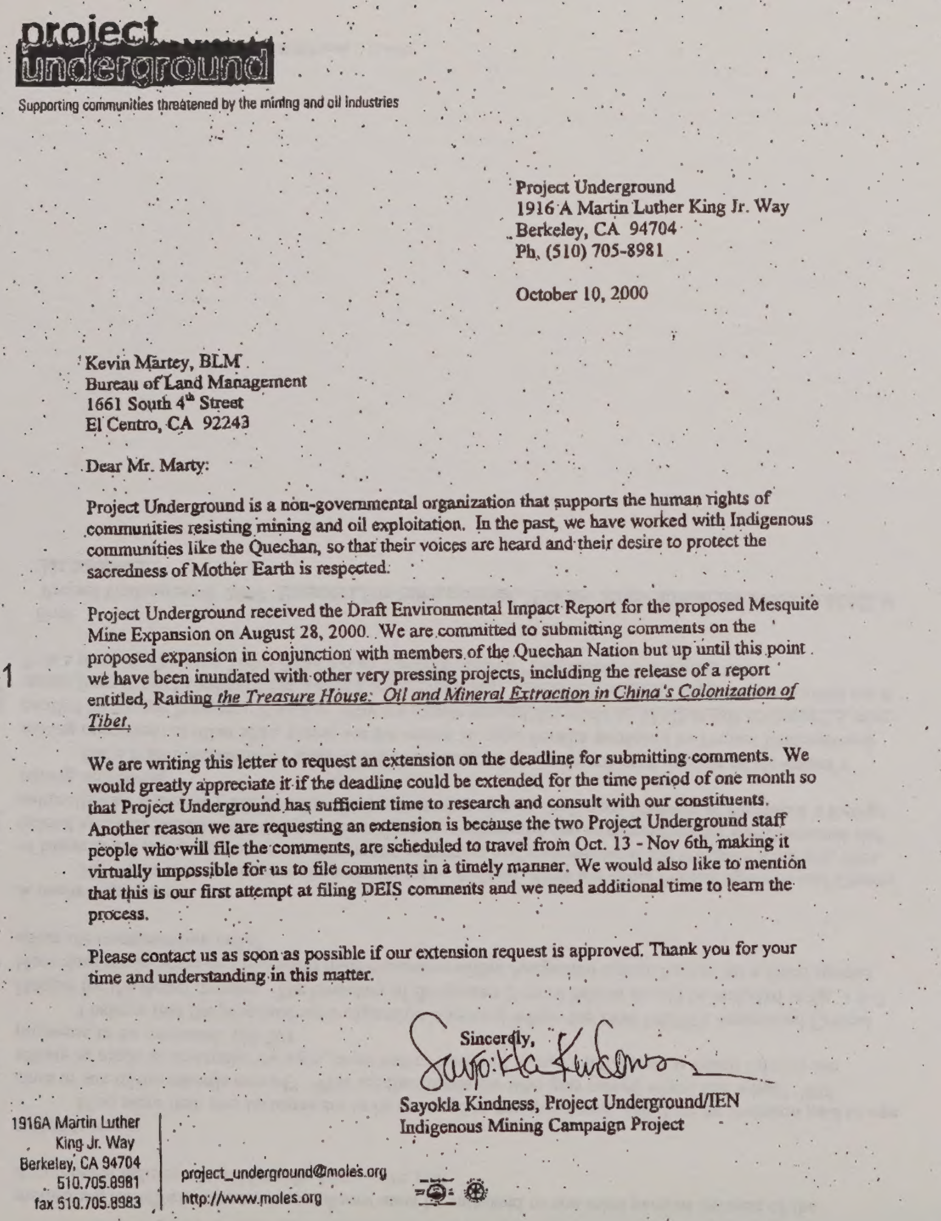
According to U.S. Fish and Wildlife Service (McAller, Dec. 2000) and 1994 maps and lists of sections, the boundary of tortoise critical habitat is located east of the proposed Mesquite Mine Plan of Operations boundary. Specific boundary locations have been added to the revised Figure 3.3-2, provided in the Errata section, page Errata-18. Thus, there would be no impacts to tortoise critical habitat as a result of the mine expansion, and the issue does not arise in the calculation of compensation ratios.

Response to Comment 19-42:

Whether Newmont has money or not is not an issue in this document. Newmont will be required to post financial assurances in accordance with law. The mitigation measures and proposed reclamation plan documented in this FEIR/EIS and ancillary project documents are believed by agency staff members to be appropriate to the levels of anticipated impacts that would occur at this site as a result of this mine expansion. No mitigation for other impacts at other Newmont mining sites is appropriate.

Response to Comment 19-43:

Newmont impacts at other sites are not the subject of this FEIR/EIS.



project underground
Supporting communities threatened by the mining and oil industries

Project Underground
1916 A Martin Luther King Jr. Way
Berkeley, CA 94704
Ph. (510) 705-8981

October 10, 2000

Kevin Martey, BLM
Bureau of Land Management
1661 South 4th Street
El Centro, CA 92243

Dear Mr. Marty:

Project Underground is a non-governmental organization that supports the human rights of communities resisting mining and oil exploitation. In the past, we have worked with Indigenous communities like the Quechan, so that their voices are heard and their desire to protect the sacredness of Mother Earth is respected.

20-1 Project Underground received the Draft Environmental Impact Report for the proposed Mesquite Mine Expansion on August 28, 2000. We are committed to submitting comments on the proposed expansion in conjunction with members of the Quechan Nation but up until this point we have been inundated with other very pressing projects, including the release of a report entitled, Raiding *the Treasure House: Oil and Mineral Extraction in China's Colonization of Tibet.*

We are writing this letter to request an extension on the deadline for submitting comments. We would greatly appreciate it if the deadline could be extended for the time period of one month so that Project Underground has sufficient time to research and consult with our constituents. Another reason we are requesting an extension is because the two Project Underground staff people who will file the comments, are scheduled to travel from Oct. 13 - Nov 6th, making it virtually impossible for us to file comments in a timely manner. We would also like to mention that this is our first attempt at filing DEIS comments and we need additional time to learn the process.

Please contact us as soon as possible if our extension request is approved. Thank you for your time and understanding in this matter.

Sincerely,

Sayokla Kindness

Sayokla Kindness, Project Underground/IEN
Indigenous Mining Campaign Project

1916A Martin Luther
King Jr. Way
Berkeley, CA 94704
510.705.8981
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project_underground@moles.org
http://www.moles.org

RESPONSE TO COMMENT LETTER FROM PROJECT UNDERGROUND, SIGNED BY SAYOKLA KINDNESS, DATED OCTOBER 10, 2000

Response to Comment 20-1:
No time extension for comment submittal was granted.

October 13, 2000

Imperial County Planning/Building Department
939 Main Street, Suite B-1
El Centro, California 92243

Dear Sir:

21-1 I am a resident of Yuma AZ. And would like to comment on the Draft Environmental Impact Statement/Environmental Impact Report for the Mesquite Mine Expansion proposed by Newmont Mining Corporation. The project is a relatively minor expansion of a mine that has been active in Imperial County and Yuma AZ for over 15 years. The expansion will extend the life of the mine and the economic benefits that has been provided to this area. I am strongly in favor of the Mesquite mine expansion. Mesquite Mine has provided the local areas here with many donations and has paid a lot of taxes, which would no longer be here if the mine were forced to close.

Sincerely,

Barbara A. Ohme
1545 E. 22nd Place
Yuma, AZ 85365

RECEIVED
OCT 1 6 2000
IMPERIAL COUNTY
PLANNING, BUILDING

RESPONSE TO COMMENT LETTER FROM BARBARA A. OHME, DATED OCTOBER 13, 2000

Response to Comment 21-1:
Writer's support of the project is noted. No response is required.

10-23-2000
DATE

MANUEL M LEON
640 S. 13TH ST.
BRAWLEY, CA 92227

RECEIVED
OCT 2 4 2000
IMPERIAL COUNTY
PLANNING, BUILDING

Dear Sir:

22-1 I am a resident of Brawley, (Imperial County) and would like to comment on The Draft Environmental Impact Statement/ Environmental Impact Report for the Mesquite Mine Expansion proposed by Mesquite Newmont Mining Corporation. The expansion will extend the life of the mine and the economic benefits the mine has provided To The area. I am strongly in favor of The Mesquite Mine expansion.

Sincerely,

Manuel M. Leon
MANUEL M. LEON

RESPONSE TO COMMENT LETTER FROM MANUEL M. LEON, DATED OCTOBER 23, 2000

Response to Comment 22-1:
Writer's support of the project is noted. No response is required.

OCTOBER 18, 2000

DEAR SIR:

23-1 I AM A RESIDENT OF IMPERIAL COUNTY (OR YOUR LOCATION) AND WOULD LIKE TO COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT FOR THE MESQUITE MINE EXPANSION PROPOSED BY NEWMONT MINING CORPORATION. THE PROJECT IS A RELATIVELY MINOR EXPANSION OF A MINE THAT HAS BEEN ACTIVE IN IMPERIAL COUNTY FOR OVER 15 YEARS. THE EXPANSION WILL EXTEND THE LIFE OF THE MINE AND THE ECONOMIC BENEFITS THE MINE HAS PROVIDED TO THE AREA. I AM STRONGLY IN FAVOR OF THE MESQUITE MINE EXPANSION.

SINCERELY,

Eleanor J. Russell

RECEIVED
OCT 2 3 2000
IMPERIAL COUNTY
PLANNING, BUILDING

RESPONSE TO COMMENT LETTER ELEANOR J. RUSSELL, DATED OCTOBER 18, 2000

Response to Comment 23-1:
Writer's support of the project is noted. No response is required.

Dear Sir:

24-1 I am a resident of Yuma Arizona, but I work in Imperial County, and would like to comment on the Draft Environmental Impact Statement Report for the Mesquite Mine Expansion proposed by Newmont Mining Corporation. The Mesquite Mine has been a very good neighbor in the Imperial County, they have contributed to a lot of the activities in the Imperial area and Yuma areas since it began. The minor expansion proposed might extend the life of the Mine and the area will continue to benefit from all of the contributions the Mesquite Mine provides. I am strongly in favor of the Mesquite Mine expansion. Thank you for listening to my opinion.

Sincerely,

RESPONSE TO COMMENT LETTER FROM RON C. CASH SIGNED BY ANDREW LISSNER, NO DATE

Response to Comment 24-1:
Writer's support of the project is noted. No response is required.

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OCT 25 2009
IMPERIAL COUNTY
PLANNING, BUILDING

October 23, 2000

Imperial County Planning/Building Dept
939 Main Street, Suite B-1
El Centro, CA. 92243

To Whom It May Concern:

25-1 I am a resident of Yuma County and work in Imperial County. I would like to comment on the Draft Environmental Impact Statement/Environmental Impact Report for the Mesquite Mine Expansion proposed by Newmont Mining Corp. I am strongly in favor of the expansion of the Mesquite Mine. The economic benefits far outway the environmental impact. For over 15 years the mine has been operating, directly benefiting the Imperial Valley and surrounding areas financially. The mine employs a significant number of people living in the area and keeps the unemployment rate down. The expansion is a small one and the benefits are great.

Sincerely,

Heather Gonzales

Heather Gonzales
4114 W 13th Place
Yuma, AZ 85364

RECEIVED
OCT 27 2000
IMPERIAL COUNTY
PLANNING, BUILDING

RESPONSE TO COMMENT LETTER FROM HEATHER GONZALES, DATED OCTOBER 23, 2000

Response to Comment 25-1:
Writer's support of the project is noted. No response is required.

THE DESERT PROTECTIVE COUNCIL, INC.
A NON-PROFIT ORGANIZATION

P.O. BOX 3635 • SAN DIEGO • CALIFORNIA 92163-1635

DESERT PROTECTIVE COUNCIL
ADVISORY PANEL

SYLVIA BROADBENT
Professor of Archaeology

GEORGE W. COX
Conservation Ecologist

PETE DANGERMOND
Park Consultant

MARY DEDECKER
Botanist

BETTY FORGEY
Desert Tortoise Activist

MICHAEL FROME
Author

AUGUST FRUGE
Conservationist

LARRY IWERKS
Wilderness Advocate

WILBUR MAYHEW
Professor of Zoology

ART MONTANA
Professor of Earth Sciences

ALLAN MUTH
Biologist

KAREN SAUSMAN
BioPark Director

ROBERT STEBBINS
Herpetologist

LEONARD VINCENT
Professor of Biology

FRANK WHEAT
Attorney

HOWARD WILSHIRE
Geologist

November 27, 2000

RECEIVED
BUREAU OF LAND MANAGEMENT
00 NOV 30 PM 12:57
EL CENTRO RESOURCE AREA
EL CENTRO, CA.

COMMENTS ON MESQUITE MINE EXPANSION
Imperial County

SCH. No. 98121054/BLM No. 40204

The Desert Protective Council, Inc. appreciates the opportunity to comment on the Draft EIR/EIS Statement for the Mesquite Mine Expansion.

26-1 The Council finds that (1) the Draft EIR/EIS, as published in August, 2000, is not acceptable for many reasons, and, (2) a Supplemental or Revised EIR/EIS should be prepared and circulated to reflect the requests and concerns expressed by agencies as well as individuals and organizations. See Appendices A-1 and A-2.

26-2 The Desert Protective Council, a 47-year old, desert-oriented membership organization does not make this statement lightly. For the reasons listed below, among hundreds of others found in this and prior documents, it respectfully requests a review of the purposes in light of long-term changing economic and natural resources trends.

26-3 It appears that the Draft EIR/EIS was published prematurely. For example, land exchanges were still under court review, and, ESA (Endangered Species Act) compliance was long over-due.

The DEIR/EIS is inadequate. For example, the 2-2-99 letter (Appendix A-1,
without numbered pages) submitted by the California Department of Conservation
had numerous requests for action relative to SMARA. However, the Department
26-4 is not listed in Table 1.7.1, pages 1-25, 26, 27. DPC would request that the
Supplemental DEIR/EIS include a statement from Department of Conservation to
the effect the DEIR/EIS does include "adequate" coverage as found missing in
the last sentence of §2 of the Department's 2-2-99 letter. Note: the Section on
'Summary of NOP Responses' lists only 2 items of concern under
26-5 State Lands Commission (un-numbered page in Appendix A-2) though
three letters were submitted with multiple concerns on 4-7-99,
2-1-99 and 1-28-99.

The DEIR/EIS is incomplete. For example, data on the Reimbursement Agreement
26-6 does not appear to be updated. See State Lands Commission letter dated
1-28-99, §3, page one. Furthermore, there is lack of a verifiable percentage
of employees living and voting in Imperial County to justify statements
26-7 of benefits to the County's economy in the socio/economic sections of the
DEIR/EIS.

To safeguard for wise and reverent use by this and succeeding generations those desert areas of unique scenic, scientific,

RESPONSE TO COMMENT LETTER FROM THE DESERT PROTECTIVE COUNCIL (HARRIET ALLEN), DATED NOVEMBER 27, 2000

Response to Comment 26-1:

Per CEQA and NEPA procedures, the Final EIR/EIS responds to the comments, requests and concerns expressed by agencies as well as individuals and organizations. This FEIR/EIS fully complies with the requirements of CEQA and NEPA, and that no Supplemental or Revised DEIR/EIS is required.

Response to Comment 26-2:

The purpose of the project is described on page 1-2 of the DEIR/EIS, followed by project objectives for the applicant and regulatory agencies. The purpose and the objectives were carefully reviewed by the lead CEQA and NEPA agencies at the time the DEIR/EIS was prepared, and form the basis for the environmental analysis that follows.

Response to Comment 26-3:

The DEIR/EIS addresses ESA issues. The BLM has timely initiated a Section 7 consultation with USFWS, pursuant to Title 43 CFR 3809.1-6, following preparation of the biological assessment regarding the desert tortoise.

The only land exchange that may affect the Mesquite Mine is between the BLM and Gold Fields Mining Corporation/Arid Operations Incorporated, for implementation of the Mesquite Regional Landfill. The United States Court of Appeals for the Ninth Circuit recently issued a preliminary injunction setting aside the land exchange pending further proceedings. Impacts associated with operation of the Mesquite Regional Landfill are addressed in the "Cumulative Effects" section (4.4) of the DEIR/EIS. The court's ruling implies uncertainty about the future construction and operation of the landfill, so the cumulative effects analysis in the DEIR/EIS analyzes the maximum impacts if the landfill were constructed to its proposed size. If the landfill is not constructed, cumulative impacts reported in the DEIR/EIS will be less. The proposed mine expansion is independent of any land exchange.

Response to Comment 26-4:

That the California Department of Conservation is not listed in Table 1.7-1 is not an error, and is not a reason for declaring the DEIR/EIS inadequate. Implementation of the Surface Mining and Reclamation Act of 1975 (SMARA; California Public Resources Code, Secs. 2710 et seq.) in Imperial County has been delegated to Imperial County. Imperial County reviews and considers seriously all input from the Department of Conservation, and must certify to the Director that the reclamation plan is in compliance with Article 1 of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations in effect at the time. If the Director makes comments, and the

RESPONSE TO COMMENT LETTER FROM THE DESERT PROTECTIVE COUNCIL (HARRIET ALLEN), DATED NOVEMBER 27, 2000 (continued)

Response to Comment 26-4: (continued)

County's position conflicts with that of the Director, the County is required to prepare a written response to address, in detail, why specific comments or suggestions were not accepted.

As discussed in the Response to Comment 26-1, the lead agencies believe that no Supplemental DEIR/EIS is required. The mine reclamation plan, described in DEIR/EIS pages 2-20 through 2-26, provides for reclamation of disturbed areas for subsequent use for wildlife habitat. Public health and safety will be protected through blocking of vehicular entry into the pit areas through use of berms and other means, and some perimeter fences may be retained to preclude public entry as well (DEIR/EIS, page 2-27). Please see Response to Comments 8-11, 8-15 and 8-26 to the DOC's DEIR/EIS Comment Letter, dated October 30, 2000, in this Response to Comments Section.

Response to Comment 26-5:

Responses to the California State Lands Commission letter of clarification of April 7, 1999, were inadvertently omitted from the DEIR/EIS, although the letter was included as part of Appendix A-2, Notice of Preparation / Notice of Intent and Responses. The responses have been included in the Errata Section, pp. Errata 47-50, of this Final EIR/EIS.

The initial response of the California State Lands Commission to the Notice of Preparation (NOP) was a one-page letter dated February 1, 1999, which listed two specific concerns that are listed verbatim in the Summary of NOP Responses. According to the February 1 letter, the January 28, 1999 letter to David R. Faley, Santa Fe Pacific Gold Corporation, was attached for the County's "convenience" to indicate some of the issues that the Corporation would need to address in the application and supplementary materials in order for the Commission to proceed with processing their application. The Commission letter did not indicate that all or any of the issues in the January 28 letter needed to be addressed in the DEIR/EIS. Beyond the letters, the State Lands Commission provided periodic input to the preparation of this DEIR/EIS, in the form of participation by Maurya Falkner and/or Greg Pelka in conference call discussions on the project.

Response to Comment 26-6:

The commentor references a February 2, 1999 letter from California State Lands Commission (CSLC) to the project proponent as evidence that the DEIR/DEIS is incomplete. The letter was written by CSLC to acknowledge receipt of an application for a mining lease on State land and to request additional information necessary to process the application. In order to cover staff expenses related to processing the lease application and associated environmental documents, CSLC requested that the reimbursement agreement be updated to increase funds in the reimbursement account from $5,000 to $15,000. Following receipt of the letter, the reimbursement agreement was updated and an additional $10,000 was forwarded to SLC for deposit in the account (deposit date: September 24, 1999). There are currently no monies owed to SLC for processing the lease application (personal communication, Gayle Eckert, CSLC Accountant, 11/27/01).

RESPONSE TO COMMENT LETTER FROM THE DESERT PROTECTIVE COUNCIL (HARRIET ALLEN), DATED NOVEMBER 27, 2000 (continued)

Response to Comment 26-7:

Mine employee places of residence are tabulated in Table 3.13-1, page 3.13-3 of the DEIR/EIS. According to Mesquite Mine employee records, there were nine Riverside County (Blythe area) residents, 104 (i.e., 113-9) Imperial County residents, and 51 residents of Arizona who work at the mine. Since publication of the Draft EIR/EIS, mine employment at the site has been substantially reduced. It is reasonable to anticipate that past employee place of residence percentage would be reflected in any new work force hired to operate an expanded mine.

26-8 Another example of incomplete: Current compliance with existing permits and conditions. Page 1-16, §2 indicates that "Completion of the compensation action is pending. Phase III of the program, conprising approximately 20 acres, was never undertaken." (Permits for exploration in two northern half-sections, 1998.)

26-9 Future Actions Required For example, Table 1.7.1 on pages 1-25,26,27, 'Summary of Required Permits/Actions for the Mine Expansion, includes a minimum of 32 required future actions. The list will be increased by left-over non-compliance problems.

26-10 Hopefully the Bureau of Land Management and the County of Imperial will be able to complete and augment the material in the Draft EIR/EIS to address concerns expressed, and, in the case of agencies, obtain statements of a positive nature.

Thank you for the opportunity to express our concerns. Please keep my name on the mailing lists for Mesquite Mine Expansion as well as Landfill

Respectfully submitted,

Harriet Allen

Harriet Allen, DPC
Southern desert Representative

RESPONSE TO COMMENT LETTER FROM THE DESERT PROTECTIVE COUNCIL (HARRIET ALLEN), DATED NOVEMBER 27, 2000 (continued)

Response to Comment 26-8:

The Phase III exploration program referred to in the comment was not conducted because the drill information collected in the Phase I and II programs was adequate for evaluating the area. Not completing the Phase III program was an operator decision that resulted in a lower level of environmental impact from the surface exploration program. It does not represent incompleteness of the DEIR/EIS or noncompliance with some existing permit condition. Since publication of the DEIR/EIS, compensation acreage referred to on Page 1-16 has been deeded to BLM and will be protected in perpetuity for the benefit of the desert tortoise. The sentence: "Completion of compensation action is pending." on Page 1-16 has been deleted in the Final EIR/EIS.

Response to Comment 26-9:

That future permits and/or actions will be needed in order for the proposed Mine expansion to proceed is not an error, nor an indication that the DEIR/EIS is inadequate. Such future actions are a part of almost all EIRs and EISs. They result from the early analysis of potential environmental issues in order to provide timely information for governmental decision-makers.

Response to Comment 26-10:

As noted in the Response to Comment 26-9, there are numerous permits to be obtained by the Mine expansion proponents. These permit processes may require that the Applicant to provide additional information.

Per CEQA and NEPA procedures, the Final EIR/EIS responds to the comments, requests and concerns expressed by agencies as well as individuals and organizations. This FEIR/EIS fully complies with the requirements of CEQA and NEPA, and no Supplemental or Revised DEIR/EIS is required.

Each responsible agency and the public will have the opportunity to provide written or verbal comments on this FEIR at the public hearings before the Imperial County Planning Commission and the Board of Supervisors, as needed. Each cooperating agency will have an opportunity to review the Final EIS during a subsequent 30-day waiting period. Finally, it is important to note that the U.S. Fish and Wildlife Service issued a "no jeopardy" biological opinion on August 10, 2001.

▪ Section 3▪

Errata

DEIR/EIS Page No.	Errata Page No.	Changes Made
4.1.2-5	Errata-22	Removes references to “Waters of the U.S.” from Figure 4.1.2-1.
4.1.2-9	Errata-23	Removes reference to EIR/EIS Section 3.2.3.5 for water chemistry discussion.
4.1.2-9a	Errata-24	Provides a Table (4.1.2-1) of Predicted Pit Lake Water Quality.
4.1.2-11	Errata-25	Deletes the last bulleted item (Waters of the U.S.); adds a mitigation measure regarding submittal of engineering drawings to Caltrans for Swale D erosion protection of SR-78.
4.1.3-4	Errata-26	Removes references to “Waters of the U.S.” from the page.
4.1.3-6	Errata-27	Removes references to “Waters of the U.S.” from table, corrects value in a cell.
4.1.3-17 to 4.1.3-25	Errata-28 to Errata-41	Incorporates Reclamation Plan and Biological Opinion mitigation measures.
4.1.3-26	Errata-42	Clarifies language of revegetation mitigation measures.
4.1.8.44	Errata 43	Incorporates input by APCD to mitigation measures.
4.1.14-3	Errata 44	Removes desert tortoise fencing from discussion of fencing to exclude people.
4.2-11	Errata-45	Removes references to “Waters of the U.S.” from the page.
4.4-14	Errata-46	Clarifies that OISAs would also be used as a source for Mesquite Landfill cover.
none	Errata-47 to Errata-50	Provides responses to California State Lands Commission letter of April 7, 1999, inadvertently omitted from Appendix A-2.

Waters of the United States

Early in the Mesquite Mine Expansion EIR/EIS study process, U.S. EPA personnel indicated that they believed that the proposed project might result in impacts to “Waters of the U.S.” under the jurisdiction of the U.S. Army Corps of Engineers. As a result, studies were conducted to define such “Waters,” and the issue was addressed in the draft EIR/EIS. However, in early 2001, the U.S. Supreme Court rendered a decision in Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, No. 99-1178. Under that decision, the Court ruled that the Migratory Bird Rule exceeded the authority granted to the Corps under Section 404(a) of the Clean Water Act and that the Corps does not have jurisdiction over isolated, nonnavigable, and intrastate waters. Based on this ruling, the desert washes and tributaries thereto within the Mesquite Mine project area do not constitute “Waters of the United States” since they are isolated, non-navigable, completely intrastate waters. This has been formally confirmed by the ACOE letter of March 9, 2001, included in this FEIR/EIS following Response to Comments 2-5 through 2-14. Consequently, all of the DEIR/EIS passages that address or refer to “waters of the U.S.” are superfluous, and should be deleted. We have conducted a search of the document to attempt to find all these passages, and following is a list of those we identified. Specific changes associated with some of the more complex changes are included on following Errata sheets. However, most of the changes associated with the “Waters of the U.S.” issue are straightforward, and no replacement page has been provided.

Abstract, page C-2, delete middle paragraph in right column (see replacement page at Errata-4);

Executive Summary, page S-2, middle paragraph in right column (see replacement at Errata -5);

Table S-1, page S-11, delete middle paragraph in column 1, and all related information to the right; page S-28, paragraph 2, column 3, replace "waters of the U.S." with "desert washes" and delete the last sentence; page S-29, paragraph 1, column 1, delete "and may impact 3 fewer acres of Waters of the U.S."

Chapter 1, Section 1.6.1.5, page 1-21, delete the fifth bulleted item; Table 1.7-1, delete the row listing the U.S. Army Corps of Engineers.

Chapter 2, Table 2.3-1, page 2-34, middle paragraphs under Biological Resources, delete the phrase "ACOE jurisdictional waters and"; Section 2.4.1.1, page 2-36, second paragraph, replace "Waters of the United States" with "desert washes"; Section 2.4.1.2, page 2-37, second paragraph, replace "Waters of the United States" with "desert washes" ; page 2-39, delete second paragraph; Section 2.4.5, p. 2-40, delete the entire section.

Chapter 3, Sec. 3.2.2.1, page 3.2-4 and 3.2-5, all (see replacement pages at Errata-13 and -14); page 3.3-2, Federal Clean Water Act, delete the fifth bulleted point;

Chapter 4, page 4.1.2-3, replace the last paragraph and all the text on page 4.1.2-4, with the following sentence: "As described in revised Section 3.2.2.1, no "Waters of the United States exist in the vicinity of the Mesquite Mine. Thus, no impacts to any such waters will occur as the result of Mine expansion."; page 4.1.2-5, delete Figure 4.1.2-1 and replace it with the Figure on Errata-20; Table 4.1.2-1, delete the entire table; Sec. 4.1.2.3, page 4.1.2-11, delete the last bulleted item (Errata-23); page 4.1.3-4, last paragraph (see replacement page at Errata-23); Table 4.1.3-2, page 4.1.3-6, entire table (see replacement page at Errata-25); page 4.1.3-19, delete the words "waters of the U.S., and associated" in mitigation measure #8 (Errata-29); Sec. 4.2.2.1, page 4.2-3, third paragraph, replace "Waters of the U.S." with "desert washes"; page 4.2-4, last paragraph and page 4.2-6, first three paragraphs, replace with "As described in revised Section 3.2.2.1, no "Waters of the United States exist in the vicinity of the Mesquite Mine. Thus, no impacts to any such waters will occur as the result of Mine expansion."; page 4.2-5, delete Table 4.2.2-1; page 4.2-9, delete the fifth bulleted point; page 4.2-11, second to last paragraph, see replacement page at Errata-42; Sec. 4.2.3.4, page 4.2-19, first paragraph in the section, change the last sentence; page 4.3-2, second paragraph under 4.3.3, delete "Army Corps of Engineers jurisdictional waters and"; Sec. 4.3.15, page 4.3-6, first paragraph, delete "and any Army Corps of Engineers jurisdictional Waters of the United States"; page 4.4-2, third paragraph, delete "jurisdictional Waters of the United States, or"; page 4.4-15, first paragraph, delete "meeting the ACOE definitions of "Waters of the U.S." and "ACOE and".

Reclamation Plan, 2001

As a result of refinements incorporated into the revised Reclamation Plan, clarifying changes have been made to the text on DEIR/EIS pages 2-22 through 2-26 (Errata-8 through Errata-12), Figure 2.1-2 (Errata-7), and on page 4.1.3-26 (Errata-40). All new mitigation measures associated with the Reclamation Plan have been incorporated by reference into this FEIR/FEIS (p. 4.1.3-17, Errata-26). The date for the Final Reclamation Plan was also changed on page 2-20, from November 1999 to November 2001. These changes associated with the Reclamation Plan were made in response to agency comments and do not result in any additional project impacts.

million tons of gold ore would be processed, and 242 million tons of overburden/interburden would be moved. Approval of this expansion would allow the Mine to continue to operate through 2006, instead of closing in 2001..

Approximately 20% of the Proposed Action expansion areas are located on private land. Another 13% are within California State lands north of the existing Mine site. The remaining 67% of the proposed expansion area is within BLM-managed lands.

Cumulative impacts to visual resources are anticipated, in conjunction with the planned and approved but unbuilt Mesquite Landfill adjacent to the Mine. Cumulative PM_{10} (fugitive dust) air quality impacts are anticipated because of the area's nonattainment status for that pollutant. No other unmitigated direct, indirect, or cumulative impacts of the Proposed Action have been identified.

Alternatives to the Proposed Action have been identified in accordance with CEQA and NEPA guidelines. One other feasible alternative (Reduced Footprint Alternative) was addressed in this EIR/EIS. Other possible alternatives were identified, but were found to be infeasible and were eliminated from further consideration.

The Reduced Footprint Alternative would forego development of the proposed Big Chief West OISA, and would reduce the sizes of the East Rainbow North OISA and the East Rainbow South OISA by a total of 45 acres. This alternative would reduce the area of new land to be disturbed by storing approximately 90 million tons of waste rock (of the projected 240 million tons to be generated in proposed excavations) in the existing mine pits.

Under the No Project/No Action alternative, expansion of the proposed facilities would not occur, but mining and processing of ore would continue for a short time. Mining would continue in the Vista and Big Chief pits, overburden / interburden would be placed to their permitted limits on the existing OISAs, and leaching of gold from the ore would continue at the permitted heap leach pads.

Benefits associated with the Project are primarily social and economic in nature. If the expansion is approved, it is anticipated that the Mine will remain open an additional six years. This will provide continued employment for the existing work force, as well as an additional 20-30 new employees. This will increase local income levels and local governmental revenues. In addition, trust funds managed by the State Lands Commission will receive additional mineral extraction royalties.

Numerous other governmental actions, decisions and approvals will have to occur before expansion of the Mine can proceed. These actions include:

- Endangered Species Act, Section 7 Consultation between BLM and U.S. Fish & Wildlife Service
- U.S. Fish & Wildlife Service to review the Biological Evaluation, and issue Biological Opinion
- National Historic Preservation Act, Section 106 Consultation between the BLM and the California Office of Historic Preservation (completed)
- BLM to approve Mine Plan of Operations
- ~~U.S. Army Corps of Engineers to approve an individual permit to dredge or fill Waters of the United States~~
- BLM to publish a Record of Decision on this EIS
- California Dept. of Game and Fish to review the Biological Evaluation, issue a CESA Incidental Take Permit, and a Streambed Alteration Agreement (Section 1603)
- California Regional Water Quality Control Board to decide whether to amend Waste Discharge Requirements for discharge of waste to land~~; also to approve a Certificate of Compliance with Section 401 of the Clean Water Act~~
- California State Lands Commission to review/ approve a Mineral Extraction lease
- Imperial County Board of Supervisors to certify this EIR, and approve a Mitigation Monitoring and Reporting Program; also approve a Conditional Use Permit amendment/Reclamation Plan for Mine expansion, approve a Conditional Use Permit amendment for continued use of water from the Mesquite Mine well field.
- Modification to existing Authority to Construct and Permit to Operate from the Imperial County Air Pollution Control District.

East Rainbow South OISA by a total of 45 acres. This alternative would reduce the area of new land to be disturbed by storing approximately 90 million tons of waste rock (of the projected 240 million tons to be generated in proposed excavations) in the existing mine pits.

No Project / No Action Alternative

Under this alternative, expansion of the proposed facilities would not occur, but mining and processing of ore would continue for a short time. Mining would continue in the Vista and Big Chief pits, overburden / interburden would be placed to their permitted limits on the existing OISAs, and leaching of gold from the ore would continue at the permitted heap leach pads.

Impacts That Cannot Be Mitigated

Cumulative impacts to visual resources are anticipated in conjunction with the planned and approved but unbuilt Mesquite Landfill adjacent to the Mine. Cumulative PM_{10} (fugitive dust) air quality impacts are anticipated because of the area's nonattainment status for that pollutant. No other unmitigated direct, indirect, or cumulative impact of the Proposed Action has been identified.

Summary of Project Impacts

The environmental consequences of the Proposed Action and its alternatives are evaluated in Chapter 4 of this EIR/EIS for each of the 12 elements of the human environment identified through the scoping process. No significant impacts to the following critical elements of the human environment would occur for any of the project alternatives.

- Air Quality (mitigated)
- Areas of Critical Environmental Concern
- Cultural Resources
- Farm Lands
- Floodplains
- Native American Religious Concerns
- Threatened or Endangered Species (mitigated)
- Hazardous or Solid Wastes
- Water Quality
- Wetlands/Riparian Zones
- Wild and Scenic Rivers
- Wilderness

Chapter 4 includes a discussion of mitigation measures that would eliminate impacts or would reduce them to a level less than significant.

Table S-1 summarizes the environmental effects of the Proposed Action and its alternatives. The table addresses the potential impacts that are expected to occur, their significance, recommended mitigation measures, and resulting level of significance after implementation of the mitigation measures.

Other Federal, State, and Local Actions

Numerous other governmental actions, decisions and approvals will have to occur before expansion of the Mine can proceed. These actions include:

- Endangered Species Act, Sec.7 Consultation between BLM and U.S. Fish & Wildlife Service
- U.S. Fish & Wildlife Service to review the Biological Evaluation, and issue Biological Opinion
- National Historic Preservation Act, Section 106 Consultation between the BLM and the California Office of Historic Preservation (completed)
- BLM to approve Mine Plan of Operations
- ~~U.S. Army Corps of Engineers to approve an individual permit to dredge or fill waters of the United States~~
- BLM to publish a Record of Decision on the EIS
- California Dept. of Game and Fish to review the Biological Evaluation, issue a CESA Incidental Take Permit, and a Streambed Alteration Agreement (Section 1603)
- California Regional Water Quality Control Board to decide whether to amend Waste Discharge Requirements for discharge of waste to land~~; also to approve a Certificate of Compliance with Section 401 of the Clean Water Act~~
- California State Lands Commission to review/approve a Mineral Extraction lease
- Imperial County Board of Supervisors to certify this EIR, and approve a Mitigation Monitoring and Reporting Program; also approve a Conditional Use Permit amendment/Reclamation Plan for Mine expansion, approve a Conditional Use Permit amendment for continued use of water from the Mesquite Mine well field.
- Modification to existing Authority to Construct and Permit to Operate from the Imperial County Air Pollution Control District.

- **Permits for Consolidated POO, 1995**
  No additional permits were required. The Consolidated POO simply compiled existing mine plans.

- **Permits for exploration in two northern half-sections, 1998**
  Biological Opinion 1-6-98-F-39, July 7, 1998. Exploration activities and drilling were anticipated to result in disturbance of 15 acres (Phases I and II); compensation for that disturbance was required at a 3:1 ratio. Forty-five acres of compensation were thus required, of which 9 must be microphyll woodland (to compensate for impacts to 3 acres of microphyll woodland). ~~Completion of the compensation action is pending.~~ Transfer of the required compensation lands has been completed. Phase III of the program, comprising approximately 20 acres, was never undertaken.

  Newmont obtained a Nationwide Permit (NWP-26) regarding Section 404 of the Clean Water Act, dated July 8, 1998. California Dept. of Fish and Game 2081 and 1603 permits were obtained, as was Reclamation Plan RP97-005, issued by Imperial County.

  The permitted program of exploratory drilling was subsequently conducted in the northern halves of Sections 5 and 6 of T13S, R19E. This program consisted of 387 boreholes, of which only 154 boreholes were completed. Geologic and metallurgical evaluation of the drilling results is ongoing. The proposed expansion of the North Big Chief Open Pit Mine discussed in Section 4.0 of this Plan is based on current knowledge of that deposit.

Following is a listing of existing federal, state, and local approvals for the Mesquite Mine. These documents can be reviewed at the Bureau of Land Management, 1661 S. Fourth St., El Centro, California 92243; or at the Imperial County Planning and Building Department, 939 Main Street, El Centro, California 92243.

FEDERAL AGENCIES

Bureau of Land Management:

The Mesquite Mine Consolidated Plan of Operations 1995

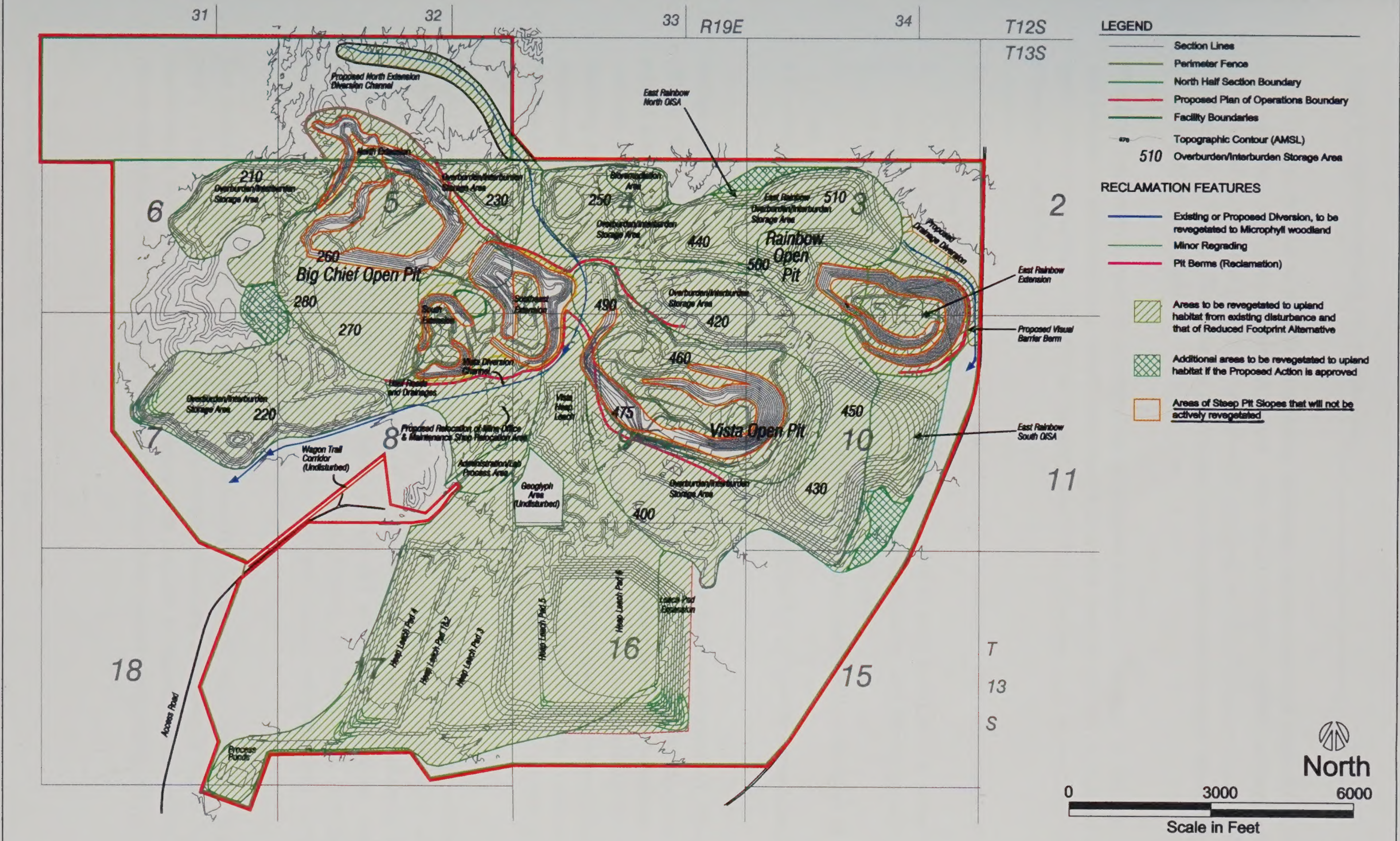
The Plan of Operations Amendment Narrative Optimization of Operating Plans 7/12/89

The VCR Plan of Operations (BLM No. CAMC 109887/121229) 11/4/87

EIR/EA certified as adequate by BLM (BLM No. CA-067-87-48) 11/2/87

The Mesquite Plan of Operations (BLM No. CAMC 81188/261) January, 1985

EIR/EA certified as adequate by BLM (BLM No. CA-067-85-05) 12/27/84


31
32
33
R19E
34
T12S
T13S
Proposed North Extension Diversion Channel
East Rainbow North OISA
North Extension
Overburden/Interburden Storage Area
210
Overburden/Interburden Storage Area
230
Bioremediation Area
250
4
Overburden/Interburden Storage Area
East Rainbow Overburden/Interburden Storage Area
510
3
2
6
5
260
Big Chief Open Pit
280
270
440
Rainbow Open Pit
500
Proposed Drainage Diversion
East Rainbow Extension
Southeast Extension
South Extension
490
Overburden/Interburden Storage Area
420
Proposed Visual Barrier Berm
Vista Diversion Channel
Haul Roads and Drainages
460
Overburden/Interburden Storage Area
220
Vista Heap Leach
475
450
Vista Open Pit
10
East Rainbow South OISA
7
8
9
Proposed Relocation of Mine Office & Maintenance Shop Relocation Area
Wagon Trail Corridor (Undisturbed)
Administration/Lab Process Area
Geoglyph Area (Undisturbed)
Overburden/Interburden Storage Area
430
11
400
Heap Leach Pad 6
Leach Pad Expansion
Heap Leach Pad 4
Heap Leach Pad 1&2
Heap Leach Pad 3
Heap Leach Pad 5
18
17
16
15
T
13
S
Access Road
Process Ponds
LEGEND
Section Lines
Perimeter Fence
North Half Section Boundary
Proposed Plan of Operations Boundary
Facility Boundaries
Topographic Contour (AMSL)
510 Overburden/Interburden Storage Area
RECLAMATION FEATURES
Existing or Proposed Diversion, to be revegetated to Microphyll woodland
Minor Regrading
Pit Berms (Reclamation)
Areas to be revegetated to upland habitat from existing disturbance and that of Reduced Footprint Alternative
Additional areas to be revegetated to upland habitat if the Proposed Action is approved
Areas of Steep Pit Slopes that will not be actively revegetated
North
0
3000
6000
Scale in Feet

SOURCE: Newmont Mining Corporation and BRG Consulting, Inc., 2001.

10/26/01

Mesquite Mine Expansion EIR/EIS

Proposed Final Reclamation Configuration

FIGURE

2.1-2

3. Reclaim the area to a stable, functioning landscape unit/ecosystem to allow for similar, but not identical, land uses as currently exist. This would include wildlife habitat and recreation consistent with the applicable reclamation standards of the California Code of Regulations, Article 9, Title 14 (Reclamation Standards), and the surface management regulations under CFR Title 43, Group 3800.

The final landforms cannot be reclaimed to the original contours. The goal of the plan is to create and enhance a self-supporting desert ecosystem that would provide for the post-mine land use of open space for purposes of wildlife habitat, mineral exploration, and recreation. The plan's objectives are as follows:

1. Establishment of stable surfaces and drainage conditions that are compatible with the surrounding landscape;
2. Creation of surface and substrate conditions conducive to plant establishment, where possible;
3. Enhancement of natural reproduction through soil scarification and microcontouring;
4. Management of surface water runoff with microcatchments
5. Use of native plant seeds and materials from local sources within a 10-mile radius of the project site, to ensure site adaptability of the seed; and
6. Blending of the side slopes with the surrounding hillsides in specific areas identified in this plan.

Reclamation demonstration plots comprising 600 acres have been established on Mesquite Mine OISAs. These lands have been recontoured, and more than 500 acres of the test plots have been seeded with native seeds. The plots serve the purposes of training equipment operators in grading methods used for revegetation, in establishing time and equipment use standards for reclamation planning and cost estimation, and for documentation of activities for tracking and reporting progress. Additional details about the test plots are provided in Attachment 1 of the 1999 POO. These demonstration plots, and the studies conducted by the University of Arizona, provide some of the information upon which the proposed Reclamation Plan has been developed.

The reclamation effort consists of different methods to be applied, as appropriate, to reclaim different types of surface disturbance. These methods are the construction and reclamation of diversion channels; demolition of structures and removal of facilities; rinsing and neutralization of residual leach solution in the solution ponds and heap; design and construction of stable slopes; rough regrading; surface preparation through fine grading, ripping to loosen soil, topsoiling and/or construction of water catchments for vegetation; tree and cactus transplantation; reseeding and revegetation with only species indigenous to the area.

The reclamation approach utilizes surface recontouring, combined with seeding of plant species native to this desert region. Proposed final topographic contours are shown in Figure 2.1-2. Plant establishment will occur primarily in conjunction with creation of moisture-enhancement structures (microcatchments) that would serve to collect and concentrate natural precipitation in small basins.

Baseline vegetation conditions for the mine expansion areas are described in Section 3.3 of this EIR/EIS, and in the Vegetation Baseline Survey, Mesquite Mine Project (2000), prepared by Samuel Bamberg and Ingrid Hanne. The latter document is included as Appendix B to this EIR/EIS. Bamberg and Hanne distinguished four categories of shrub/scrub vegetation, covering 90 percent of the study area, and three categories of tree/shrub vegetation (based on the size of the desert wash in which they were found). Perennial shrubs are the dominant vegetation, with trees and a few herbaceous perennials found along the washes. The dominant shrub species, in order of abundance, are *Encelia farinosa* (inciensio), *Ambrosia dumosa* (burrobush), *Larrea tridentata* (creosote bush), and *Opuntia bigelovii* (teddy-bear cholla). The most common tree species were Olneya tesota (desert ironwood) and Cercidium floridum (blue palo verde), found along the washes at relatively low densities.

Perennial plant densities within the proposed mine expansion areas ranged from 0 plants per acre in areas of desert pavement, up to 1,655 plants per acre in areas of shallow washes. The 10 percent of the study area containing tree/shrub vegetation contained an average of 1,055 plants per acre, while shrub/scrub vegetation areas averaged 164 plants per acre (75 percent of the study area). The remaining 15 percent had little or no plant cover, due to disturbance from roads or other soil disruption.

Revegetation would be undertaken for all areas that either have been, or are proposed to be, disturbed by mining activity. This includes all areas that contain green diagonal hatching in Figure 2.1-2, plus the areas of proposed mine expansion shown in color on Figure 2.1-1. Because of the physical variance between the different portions of the disturbed area, three revegetation approaches are proposed. One approach would focus on revegetating approximately 5 miles of existing and proposed diversion channels, with an emphasis on reestablishment of microphyll woodland species. A second approach would be used to revegetate existing and proposed OISAs, heap leach pads, and ancillary facilities using upland habitat species. A third approach addresses revegetation of the portions of the open pits other than the steep, rocky pit walls.

Diversion channels would be designed to pass the storm events which they must accommodate, per applicable law and regulations. Proposed channel designs have been submitted for review by Imperial County, the California Office of Mine Reclamation, and the California Department of Transportation. Where possible, the channel would be constructed with natural-appearing curves, benches and banks (see POO Figure B.13). The proposed bench would not be compacted. Existing diversion structures have volunteer microphyll species plants growing there; the newly designed diversions would offer even better habitat. Surfaces of the banks and benches would be regraded with microcatchment depressions to capture and concentrate available water. Topsoil salvaged from similar habitats within mine expansion areas would be utilized in preparing the benches and lower banks for subsequent seeding using a locally-gathered seed mix. The channel benches would be utilized for the relocation of suitable individuals of microphyll species from areas of planned disturbance. Microphyll species "tubelings" would also be planted along diversion channel benches.

Revegetation of OISAs, heap leach pads, and ancillary facilities/areas would follow minor regrading of portions of the heap leach pads, and rounding of contours at some corners of the OISAs

Microcatchments, essentially grooves or depressions in the area surface, would be formed to capture local precipitation, to enhance plant survival. Such microcatchments would range in length from 5 to 50 feet, and from one to 15 feet wide. This approach has been found to be successful in reclamation of the nearby American Girl Mine. Soil surfaces then would be scarified or ripped to a depth of 15-18 inches in order to capture native seeds to be sown.

Some portions of the open pits have been/would be utilized for O/I storage (see Figure 2.1-2). Such areas would be reclaimed and revegetated as described above. Haul roads and accessible portions of pits not adjacent to pit lakes would also be ripped, and graded into microcatchment areas. These graded areas would then be seeded with the locally-collected seed mix. Steep and rocky pit walls would not be actively revegetated, but it is expected that over time wind-blown seed would take root in rock cracks and crevices, as revegetation has occurred at other similar mines in Imperial County, such as American Girl and Picacho.

Little topsoil exists in the portions of the expansion areas characterized by desert pavement or upland succulent vegetation. These areas have strongly saline subsoils, alkali conditions, and gravelly or rocky textures. They are not suitable as a growth medium or seed source for reclamation. Where there is suitable topsoil, such as in microphyll woodland areas, that topsoil would be collected and used. Areas of suitable topsoil within the proposed expansion areas have been mapped (see Figures 4-5 through 4-7 in the Vegetation Baseline Survey, Appendix B). These areas were estimated to contain approximately 18,000 cubic yards of suitable topsoil. No stockpiling of topsoil is anticipated. Rather, it would be placed as needed as mine development proceeds at, first, the new diversion channels and then, if any is left, OISAs and heap leach pads. If topsoil stockpiles are needed, they would be protected from wind erosion by placing them on the lee side of existing waste rock areas, with signs identifying the material and its planned use to preclude inadvertent use for other purposes.

If plants suitable for transplantation are encountered and must be disturbed during mining activities, they would also be used for revegetation purposes. Such plants are anticipated to include small ironwood and palo verde trees having trunk diameters of 2 inches or less; barrel cactus and chollas of various sizes; small ocotillos, and other shrubs. However, the primary emphasis would be on growth of native plant materials from seed. Transplantation would be done during the late fall or early winter to increase plant survival chances, and would involve healthy plants with healthy root systems. Old growth and unhealthy stems would be pruned, and the plants would be moved within 6 hours to holes dug in microcatchment basins or other depressions. Transplanted plants would be watered twice in three hours, then again in three days. Transplanted trees would be watered periodically for up to two years, but other plants would not require additional watering unless it does not rain for six months.

The area disturbed by mining activity would be revegetated using native or naturalized plant species seeds gathered from within ten miles of the mine. A list of the specific plant species from which seeds would be obtained is found in the POO, Table B-3. Such plants have shown themselves to be able to withstand the harsh conditions present at the mine site.

In the seed collecting programs that have been implemented, seeds have been collected in three ways: 1) directly from the plants; 2) from seed accumulations below shrubs and wind rowed in washes and depressions; and 3) seed banks from salvaged soil. All three methods have been, and would continue to be used to provide seeds for Mesquite Mine revegetation. However, methods two and three have the advantages of providing large volumes of seeds; seed collection can be done at any time after a productive year, and stored; a wide variety of seeds can be collected; and the litter and soil materials collected with seeds from the ground contain useful nutrients, spores and other soil organisms. See Bamberg responses to comments on EIS Reclamation Plan, 3/31/2000.

The seeds would be distributed either by aerial application, or hand broadcast methods (for isolated areas that are less than 10 acres in size). Seed application rates are based on recent experience with 500 acres of on-site demonstration plots (see Attachment 1 of the POO). Seed application rates are expected to range from 2 to 10 pounds of seed per acre, with an average of approximately five pounds per acre.

Seeds would be scattered immediately following scarification of each successive area and creation of microcatchments. This would typically be done in the late spring or early fall, to take advantage of the winter rains. For any fairy duster (*Calliandra*) plants that are destroyed by the proposed mine expansion, replacement plants may be germinated in tubes from collected seed. When ready, they would be transplanted to locations matching their native habitat, along shallow washes within the mine boundaries. It is anticipated that transplantation would be done in early winter, to take advantage of the winter rains.

Fences would be used to preclude grazing or trampling of the new vegetation; however, it is impossible to keep deer and rabbits out. Revegetation at American Girl and Picacho mines, using a similar revegetation approach, has proven successful.

No supplemental irrigation of the seeded areas is proposed. Irrigation was tested in studies conducted by the University of Arizona's Office of Arid Lands Studies (1988-1994), but it was found too detrimental to be used because it facilitated growth of exotic, invasive weedy species.

Dr. Bamberg has monitored composition and densities of all plant species during revegetation testing programs and reclamation implementation at area mines for the last ten years. Based on his experience, and the proposed revegetation approach that uses no supplemental irrigation, no significant problem with invasive, exotic plant species is anticipated. This is because the majority of plants that germinate and grow in the revegetated mine areas are native species adapted to heat, dry climate and low soil moisture. No exotic shrubs or trees are able to grow in this desert without artificial maintenance of moisture conditions. The single exception is tamarisk, which may persist for a short time in ditches along watered roads, or at the base of heap leach pads with high soil moisture. Once the added soil moisture ceases, the tamarisk tree cannot survive the desert conditions. Selective spraying of tamarisk with an approved herbicide such as "Roundup" or "Garlon" would be considered, if necessary, subject to BLM approval. In mine areas that have been

reclaimed, no other non-native perennial plants have been recorded. Other exotic species such as red brome, and Mediterranean grass cannot out-compete the native species in areas that are not periodically disturbed. A few mustard species, such as *Malcolmia africana*, were recorded at low densities and at less than one percent cover of the annual flora in mine revegetated areas. Reclaimed areas that utilize the proposed revegetation approach have been found to be stable and self-sustaining without additional weed control or maintenance after grading and seeding.

~~The proposed revegetation success criteria are based on achieving a plant establishment that is at least 25 percent of the natural plant density and diversity formerly present in that terrain type. The 25 percent density criterion has been accepted by the BLM in their approval of several recent mine reclamation plans in the vicinity. Appendix B to this EIR/EIS identifies terrain types present in each proposed mine disturbance area, maps their boundaries, calculates their areas, and determines their existing plant densities and diversity. Table B.5 on page B-36 of the POO displays the plant density criteria that would determine revegetation success, for each vegetation subcategory. These densities range from 0 plants per acre for desert pavement, through upland at 55 plants per acre, up to 414 plants per acre for shallow washes. Plant diversity criteria would be based on the vegetation baseline report information.~~

Separate revegetation success criteria are proposed for areas of wash habitat reclamation and for reclaimed areas outside the washes. The success criteria are based on the results of baseline vegetation surveys performed by Bamberg Associates (“Vegetation Baseline Monitoring Report,” 2000) and comparison with similar natural vegetation types. BLM would monitor and enforce revegetation efforts for at least ten years, or until revegetation success criteria have been met.

The reclamation standard for wash habitat reclamation will be 50% of the diversity, and 60% of the perennial density of the undisturbed large washes as determined by quantitative surveys for two consecutive years. Based on this standard, proposed success criteria for wash habitat would be a perennial plant density of 298 plants per acre and plant diversity of 8 native plant species.

The proposed revegetation success criteria for reclaimed areas outside the washes are based on achieving a plant establishment that is at least 35 percent of the natural plant cover and density, and 30 percent of the diversity formerly present in that terrain type as established from the baseline survey. These revegetation standards would result in densities of 122 plants per acre, cover values of 2 percent, and plant diversity of 4 plant species per areas surveyed.

The selection of the proposed success criteria is based on observations of mature desert ecosystems and is considered a benchmark, indicating a sustainable vegetation community has developed in the area and that active management of the reclaimed sites is no longer required, and that reclamation sureties associated with revegetation can be released.

2.1.8 Compliance Monitoring

The various permits for operation of the proposed mine expansion stipulate numerous monitoring and reporting requirements. A mitigation, monitoring, and reporting program (MMRP) will be

- Violates any applicable toxic effluent standard or prohibition;
- Jeopardizes the continued existence of species listed as endangered under the federal Endangered Species Act;
- Causes or contributes to substantial degradation of the "Waters of the United States"; or,
- Unless appropriate and practicable steps have been taken which would minimize potential adverse impacts of the discharge on the aquatic ecosystem.

Pursuant to 33 CFR 325.4, the ACOE may take into account the existence of controls imposed under other federal, state, or local programs which would achieve the objective of the desired condition, or the existence of an enforceable agreement between the applicant and another party concerned with the resource in question.

"Waters" are broadly defined at 33 CFR 328.2 to include n~~on-tidal waters, including intermittent watercourses (commonly known as 'isolated waters')(33 CFR 328.3(a)(3)) and tributaries to such watercourses (33 CFR 328.3(a)(5)). "Isolated Waters of the United States" include "All other~~ waters such as *intrastate* lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce…" (33 CFR 328.3(a)(3) and tributaries to such waters (33 CFR 328.3(a)(5)). ~~, including those "which are or would be used as habitat by birds which cross state lines; or which are or would be used as habitat for endangered species; or used to irrigate crops sold in interstate commerce" (51 CFR 41217).~~

~~The limits of ACOE jurisdiction on "non-tidal Waters of the United States" extend to the "ordinary high water mark" (OHWM), in the absence of adjacent wetlands (33 CFR 328.4(c)(1)); or beyond the OHWM to the limits of the adjacent wetlands, when adjacent wetlands are present (33 CFR 328.4(c)(2)); or to the limits of the wetlands when only wetlands are present (33 CFR 328.4(c)(3)).~~ The ACOE was consulted concerning whether proposed activities would require a permit under Section 404 of the Clean Water Act. The consultation was the result of the Corps' relatively recent assertion of jurisdiction over various projects affecting desert washes in the Imperial County area, based on considerations contained in the Migratory Bird Rule. The ACOE determined that the dry desert washes that would be affected by the Mesquite Mine expansion were, indeed, "Waters of the United States."

Surveys were performed by Jones & Stokes (August~~,~~ and September 1999) to ~~identify~~ delineate "Waters of the United States," ~~including wetlands~~ in and around the Project area using methods prescribed by the Corps. The surveys inventoried each of the principal through-going ephemeral washes within the Project area, as well as all associated tributaries, to determine which met the criteria of "waters~~" and "Waters of the United States~~." No wetlands were identified within the proposed expansion; however, approximately ~~20~~ 25 acres of land ~~within the proposed Mine expansion areas were evaluated as being within the OHWM of the washes, and thus may be "waters" and~~ were considered "Waters of the U.S." under ~~the applicable~~Corps definitions. Under the Reduced Footprint Alternative, estimated Waters of the U.S. were slightly reduced, to approximately 22 acres. ~~An official determination of Waters of the U.S. will be made by the ACOE as part of the concurrent Section 404 process. A map of the "waters" relative to proposed expansion areas is provided in Section 4.1.2.~~

The ACOE jurisdiction over the desert washes in the area changed in early 2001, when the United States Supreme Court rendered its decision in Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, No. 99-1178 (January 9, 2001). Under that decision, the Court ruled that the Migratory Bird Rule exceeded the authority granted to the Corps under Section 404(a) of the Clean Water Act, and that the Corps does not have jurisdiction over isolated, non-navigable and intrastate waters.

Based on this ruling, the desert washes and tributaries thereto within the Mesquite Mine project area do not constitute "Waters of the United States", since they are isolated, non-navigable, completely intrastate waters.

3.2.3 Ground Water

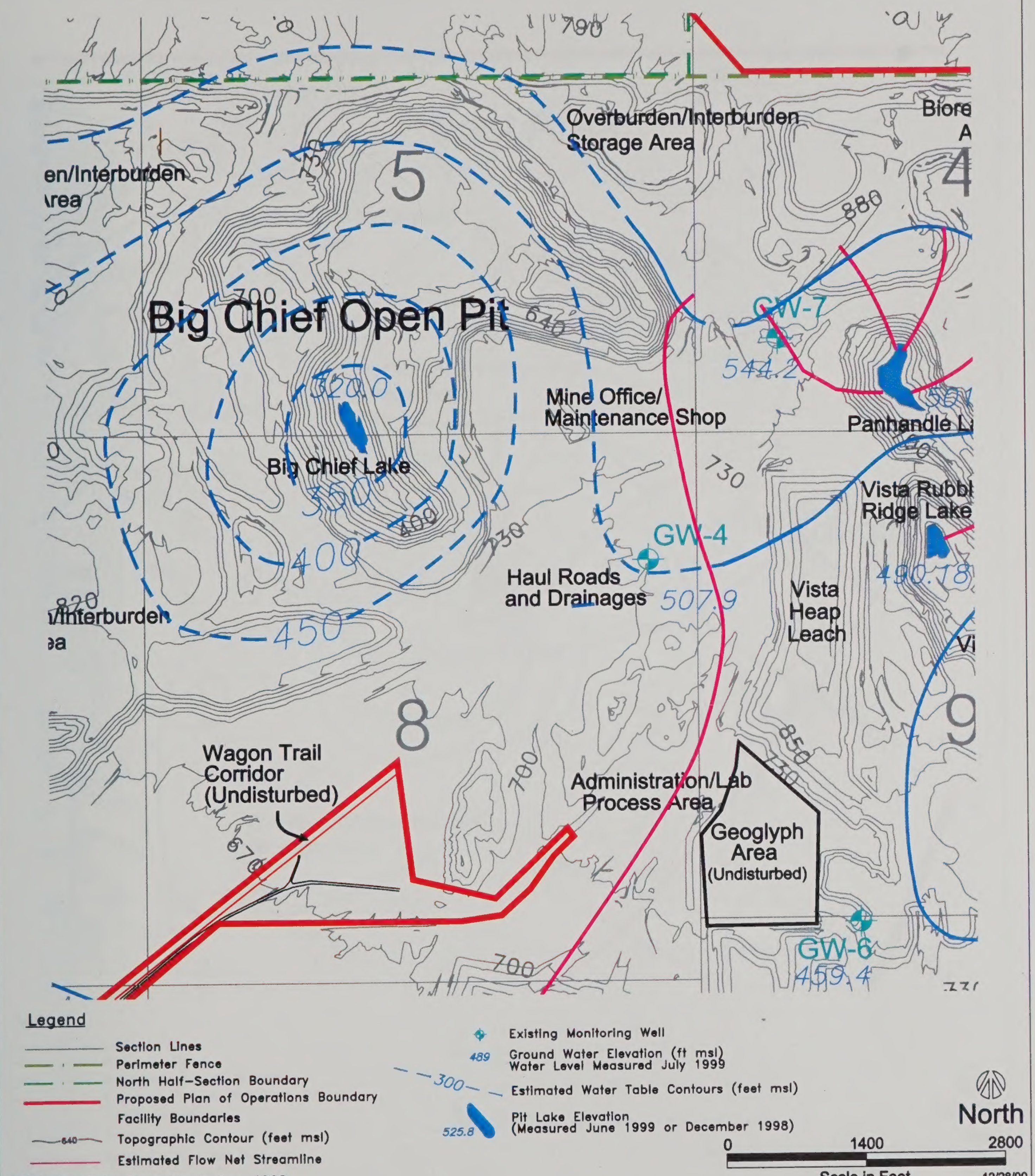
Detailed hydrogeologic studies have been conducted in the vicinity of the Mesquite site for previous mine developments, for the Mesquite Regional Landfill, and most recently, for the proposed expansion. Baker Consultants, Inc. 1999, *Draft Report Hydrologic and Geochemical Study, Proposed Mesquite Mine Expansion, Imperial County, California*, provides details for a comprehensive hydrogeologic and geochemical study for the mine pit areas, and is the primary reference for discussion of ground water flow into the mine pits, the occurrence of mine pit lakes, and related water chemistry. A copy of this report is provided in Appendix D-3. The Hydrogeology Technical Report for the Mesquite Regional Landfill (Environmental Solutions, Inc., 1993) contains additional detailed information on site and regional ground water resources. Relevant information from these studies is summarized in this section. The Hydrogeology Technical Report for the Mesquite Regional Landfill (Environmental Solutions, Inc., 1993) is hereby incorporated by reference.

3.2.3.1 Occurrence

Regional and Site Subbasin Ground Water Occurrence

Hydrologically, the project area was originally included in the Amos Basin (California Department of Public Works, Division of Water Resources, 1952), a 150-square-mile area extending south from the Chocolate Mountains (see Figure 3.2-2). Limits of the Amos Basin were not well defined and its separation from the adjacent Ogilby Basin to the south was based on ground water use rather than on geologic or hydrologic factors (St. Clair Research Systems, Inc., The Butler/Roach Group, Inc., 1984). A more recent designation incorporates both the Amos and Ogilby basins into one combined, approximately 300-square-mile Amos-Ogilby Hydrologic Unit (California Department of Water Resources [DWR], 1964). Studies performed by Environmental Solutions, Inc. (1992b) using data presented in DWR (1964) and USGS (1972 and 1975) reports indicate that the Amos-Ogilby Basin is probably also hydraulically connected to the East Mesa Basin to the west of the Algodones Sand Dunes, which approximately doubles the size of the alluvial aquifer.

Figure 3.2-3 shows the locations of wells and borings used to determine vadose zone and ground water conditions in the vicinity of the Mesquite Mine. The borings shown on this figure include wells completed for subsurface monitoring, geotechnical borings and mineral exploration borings, selected from the thousands of wells and borings completed by the Mine in the project area. Most of the geotechnical borings were installed for design of the original Mesquite Mine facilities. Geotechnical Borings ESI-1 and ESI-2 were continuously cored borings conducted to confirm interpretations that the vadose zone above basement rock consists of low-permeability material. The wells shown were completed for several purposes, including: early attempts to develop water supply sources near the mine; the development of the Mesquite Mine well field (GF-1, -2, and -3A) approximately 3 miles to the south of the mine site; monitoring wells for mine processing activities; and initial monitoring wells for the approved Mesquite Regional Landfill. These wells provide a substantial history of ground water level data.



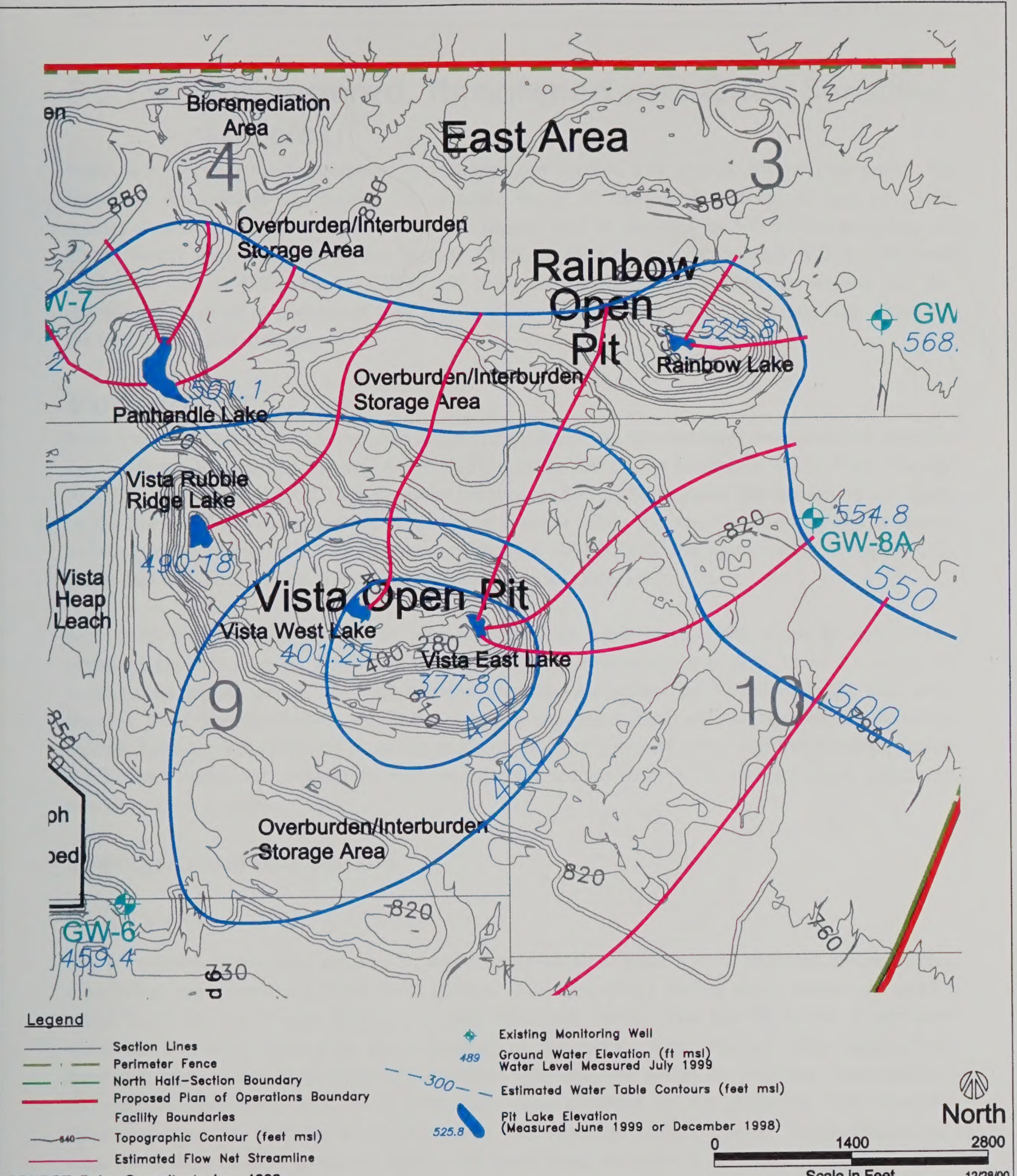
SOURCE: Baker Consultants, Inc., 1999.

Mesquite Mine Expansion EIR/EIS

FIGURE

Existing Groundwater Elevations, Detail of Big Chief Open Pit

3.2-5a


Bioremediation Area
East Area
4
3
880
Overburden/Interburden Storage Area
Rainbow Open Pit
525.8
Rainbow Lake
GW
568.
501.1
Panhandle Lake
Overburden/Interburden Storage Area
Vista Rubble Ridge Lake
490.78
Vista Heap Leach
Vista Open Pit
Vista West Lake
401.25
400
280
Vista East Lake
377.80
400
450
554.8
GW-8A
550
820
500
9
10
Overburden/Interburden Storage Area
820
GW-6
459.4
730
760
Legend
Section Lines
Perimeter Fence
North Half-Section Boundary
Proposed Plan of Operations Boundary
Facility Boundaries
Topographic Contour (feet msl)
Estimated Flow Net Streamline
Existing Monitoring Well
489
Ground Water Elevation (ft msl) Water Level Measured July 1999
300
Estimated Water Table Contours (feet msl)
525.8
Pit Lake Elevation (Measured June 1999 or December 1998)
North
0
1400
2800
Scale in Feet
12/28/00

SOURCE: Baker Consultants, Inc., 1999.

Mesquite Mine Expansion EIR/EIS

Existing Groundwater Elevations, Detail of Vista and Rainbow Open Pits

FIGURE

3.2-5b

3.3.1.4 Endangered, Threatened and Other Sensitive Species

State- and federally-listed threatened and endangered species, and species federally-proposed for listing are discussed in this section. A complete list of all threatened, endangered, and proposed species with the potential to occur within the project area is provided in NECI Biological Report, 2000. Other special-interest species include CDFG Species of Special Concern (CSC). Animals designated CSC in California by CDFG and listed on the NDDB are species that experts feel are declining through all or portions of their ranges. Other special-interest species include those listed by the CNPS and game species.

Vegetation

Plant species are categorized at the state and/or federal level. At the state level they are either listed in the California Endangered Species Act (CESA), or are listed by the California Native Plant Society (CNPS). At the federal level, they are either listed in the federal Endangered Species Act, or are listed by the Bureau of Land Management as species of concern. Only one sensitive plant species is known to occur in the project area. Threatened, endangered, CNPS-listed, and species of concern (SPOC) plants that may occur within the project area are listed in Table 3.3-1.

Surveys for plants listed in Table 3.3-1 were conducted on April 14-16, 1999, within all eight of the proposed expansion areas. Each area was divided into corridors ranging from 10 to 15 meters in width depending on terrain, and each of these corridors was walked by a field biologist. The only sensitive plant species observed within the proposed expansion areas was the fairy duster; however, suitable habitat exists within the proposed expansion areas for several other sensitive species. Figure 3.3-2 shows threatened, endangered and special status species observed in each proposed expansion area during the surveys.

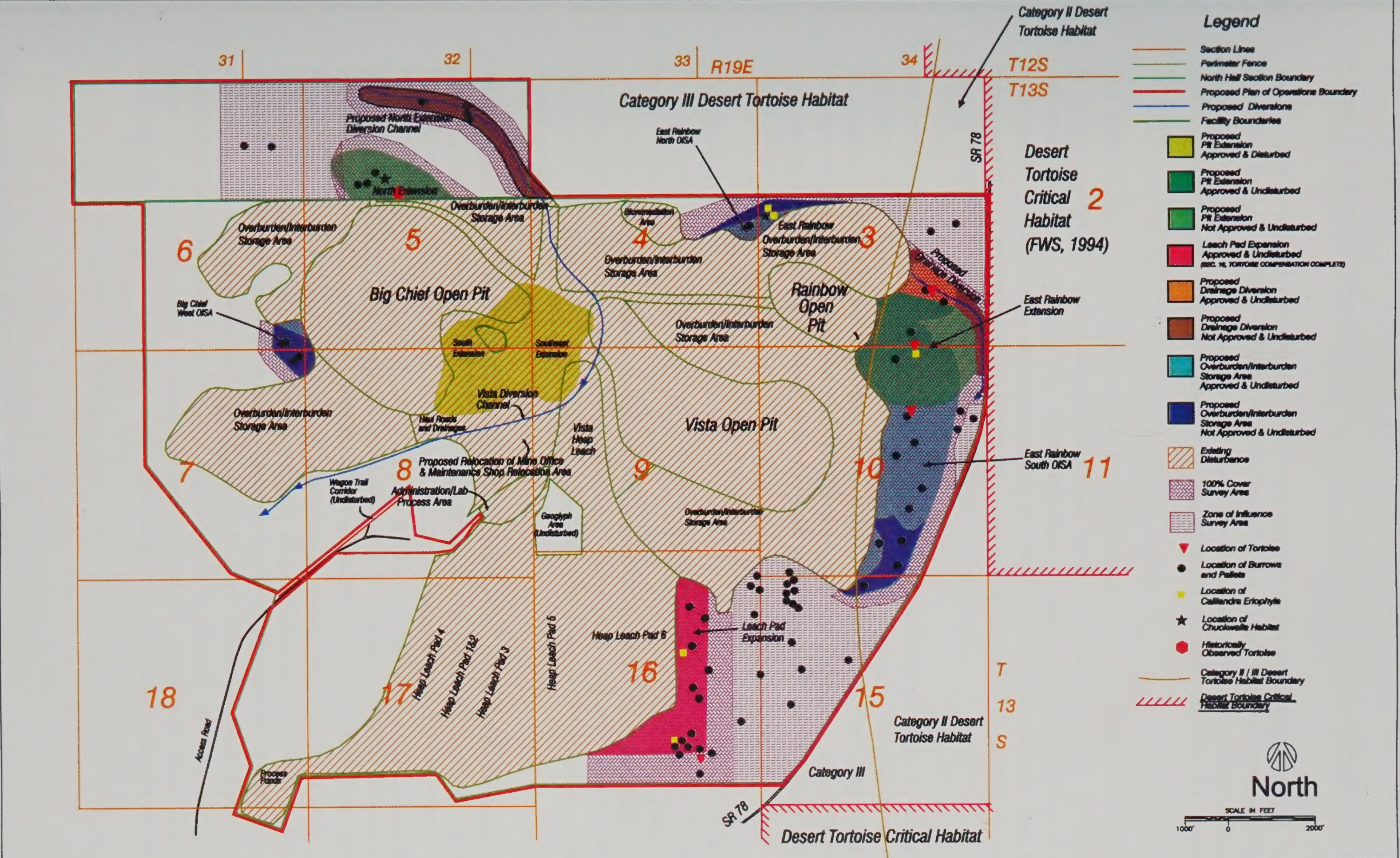
Species Observed On-site

Fairy Duster

The fairy duster (*Calliandra eriophylla*) was the only sensitive plant species observed on-site during the surveys, and is listed as a CNPS List 2 species. The fairy duster prefers sandy washes and gullies below 1,000 feet and blooms February to May (Hickman, 1993). This type of habitat is prevalent within the Proposed Action areas and individuals of this species were observed within three of the expansion areas. ~~More~~ Fewer than 20 individuals were observed within the proposed "East Rainbow Overburden/Interburden" area, 5-10 individuals were observed in the proposed "East Rainbow Extension" area, and less than ~~20~~ 23 individuals were observed in the proposed "Leach Expansion" area. In all three of these areas, this species was found along the edges of substantial washes.

Species Not Observed On-site but Could Occur

There are several sensitive plant species listed in Table 3.3-1 that were not observed during the surveys, but could potentially occur on-site because the property provides suitable habitat. These


Legend
Section Lines
Perimeter Fence
North Half Section Boundary
Proposed Plan of Operations Boundary
Proposed Diversions
Facility Boundaries
Proposed Pit Extension Approved & Disturbed
Proposed Pit Extension Approved & Undisturbed
Proposed Pit Extension Not Approved & Undisturbed
Leach Pad Expansion Approved & Undisturbed (SEC. 16, TORTOISE COMPENSATION COMPLETE)
Proposed Drainage Diversion Approved & Undisturbed
Proposed Drainage Diversion Not Approved & Undisturbed
Proposed Overburden/Interburden Storage Area Approved & Undisturbed
Proposed Overburden/Interburden Storage Area Not Approved & Undisturbed
Existing Disturbance
100% Cover Survey Area
Zone of Influence Survey Area
Location of Tortoise
Location of Burrows and Pallets
Location of Calliandra Eriophyla
Location of Chuckwalla Habitat
Historically Observed Tortoise
Category II / III Desert Tortoise Habitat Boundary
Desert Tortoise Critical Habitat Boundary
North
SCALE IN FEET
1000'
0
2000'
31
32
33
34
R19E
T12S
T13S
Category II Desert Tortoise Habitat
Category III Desert Tortoise Habitat
Desert Tortoise Critical Habitat (FWS, 1994)
2
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9
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SR 78
Proposed North Extension Diversion Channel
North Extension
East Rainbow North OISA
Overburden/Interburden Storage Area
Bioremediation Area
East Rainbow Overburden/Interburden Storage Area
Rainbow Open Pit
Proposed Drainage Diversion
East Rainbow Extension
Big Chief Open Pit
Big Chief West OISA
South Extension
Southeast Extension
Vista Diversion Channel
Haul Roads and Drainages
Vista Heap Leach
Vista Open Pit
East Rainbow South OISA
Proposed Relocation of Mine Office & Maintenance Shop Relocation Area
Wagon Trail Corridor (Undisturbed)
Administration/Lab Process Area
Geoglyph Area (Undisturbed)
Heap Leach Pad 6
Leach Pad Expansion
Heap Leach Pad 4
Heap Leach Pad 1&2
Heap Leach Pad 3
Heap Leach Pad 5
Access Road
Process Ponds
Category III
Desert Tortoise Critical Habitat

SOURCE: NECI, Newmont Mining Corp., 1999, 2000

12/14/00

Mesquite Mine Expansion EIR/EIS

FIGURE 3.3-2

Threatened, Endangered, and Special Status Species

Runoff from local precipitation could cause minor erosion on the manufactured slopes of the OISAs. Currently, the tops of the overburden/interburden piles are graded to avoid concentrating runoff to slope areas. Based on experience at the Mesquite Mine with this design, along with the coarse-grained nature and high infiltration characteristic of dumped material, the erosion potential for the new OISA's is low.

The Mesquite Mine is crossed by a channel that carries stormwater through the site (Figure 2.1-1). It is necessary to convey stormwater around project facilities to allow for safe operations and for long-term stability of the mine pits, OISAs and heaps. The proposed expansion would require construction of new drainage diversions at three locations near the mine pits: the East Rainbow Pit Diversion Channel in Sections 3 and 10; the North Extension Diversion Channel in the north half of Section 5; and the Vista Diversion Channel in Sections 4, 8 and 9.

The East Rainbow Diversion Channel and the Vista Diversion Channel are short diversions that do not materially change the watershed area or discharge location compared to existing flows. Both would be designed to fully convey stormwater flows around facilities without increasing flood hazards or otherwise affecting the hydrology of the area. The flow paths will be slightly longer through the new diversion sections, resulting in a slightly flatter overall gradient that will not be prone to above-normal levels of erosion.

The North Extension Diversion Channel will result in runoff being diverted through the mine area from approximately 1.65 square miles of additional watershed that drains to the west of the mine area under existing conditions, as shown in Figure 4.1.1-1. The North Extension Diversion Channel would be designed to accommodate the additional runoff from the 1.7 ~~m^2~~ square mile watershed and the fully convey stormwater flows through the mine area without adversely affecting the hydrology of the area. The flow path for runoff from this additional area will be lengthened, reducing the overall gradient.

The Proposed Action would be constructed and operated in accordance with the State of California General Permit for Discharges of Storm Water associated with Industrial Activities (General Permit No. CAS000001). In accordance with this permit, the existing~~a~~ Storm W~~w~~ater Pollution Prevention Plan (SWPPP) for the Mesquite operation will be modified to include activities associated with the Mesquite expansion. The ~~as required under the State of California NPDES General Construction Activity Permit. In accordance with the General Permit, a~~ SWPPP ~~identifying~~ identifies Best Management Practices (BMPs) to minimize storm water related pollution and includes monitoring and inspection protocols to gauge the effectiveness of the BMPs. ~~control erosion and a Monitoring Plan shall be developed and implemented concurrently with commencement of grading activities, and a complete and accurate Notice of Intent (NOI) shall be filed with the SWRCB.~~ Upon completion of construction, and throughout the project's life, the Proposed Action may also require an NPDES permit for any point source discharge ~~in the~~ to surface waters and State Waste Discharge Requirements (WDRs) for discharges to land. Therefore, erosion impacts would not be significant.

expansion. The expansion would allow recovery of gold from ore reserves identified in the Big Chief and Rainbow Pit areas.

Leaseable Mineral Resources

No geothermal or other leaseable mineral resources occur at or near locations of the Proposed Action. Therefore, no significant impacts would occur.

Seismicity

Holocene faults do not exist within or adjacent to the project site and, therefore, surface rupture in the event of an°earthquake is not likely. The nearest potentially active fault is located approximately 9°miles from the proposed site (Section°3.1.6). Regional seismicity is not expected to cause large ground motions at the project site. Also, current Uniform Building Code seismic safety standards would be applied to all new building designs. Emergency power from on-site diesel generators would be provided to keep essential facilities operating (e.g.,°leach solution circulation) in the event of power failures caused by regional seismic activity. Therefore, impacts would not be significant.

4.1.1.3 Mitigation Measures

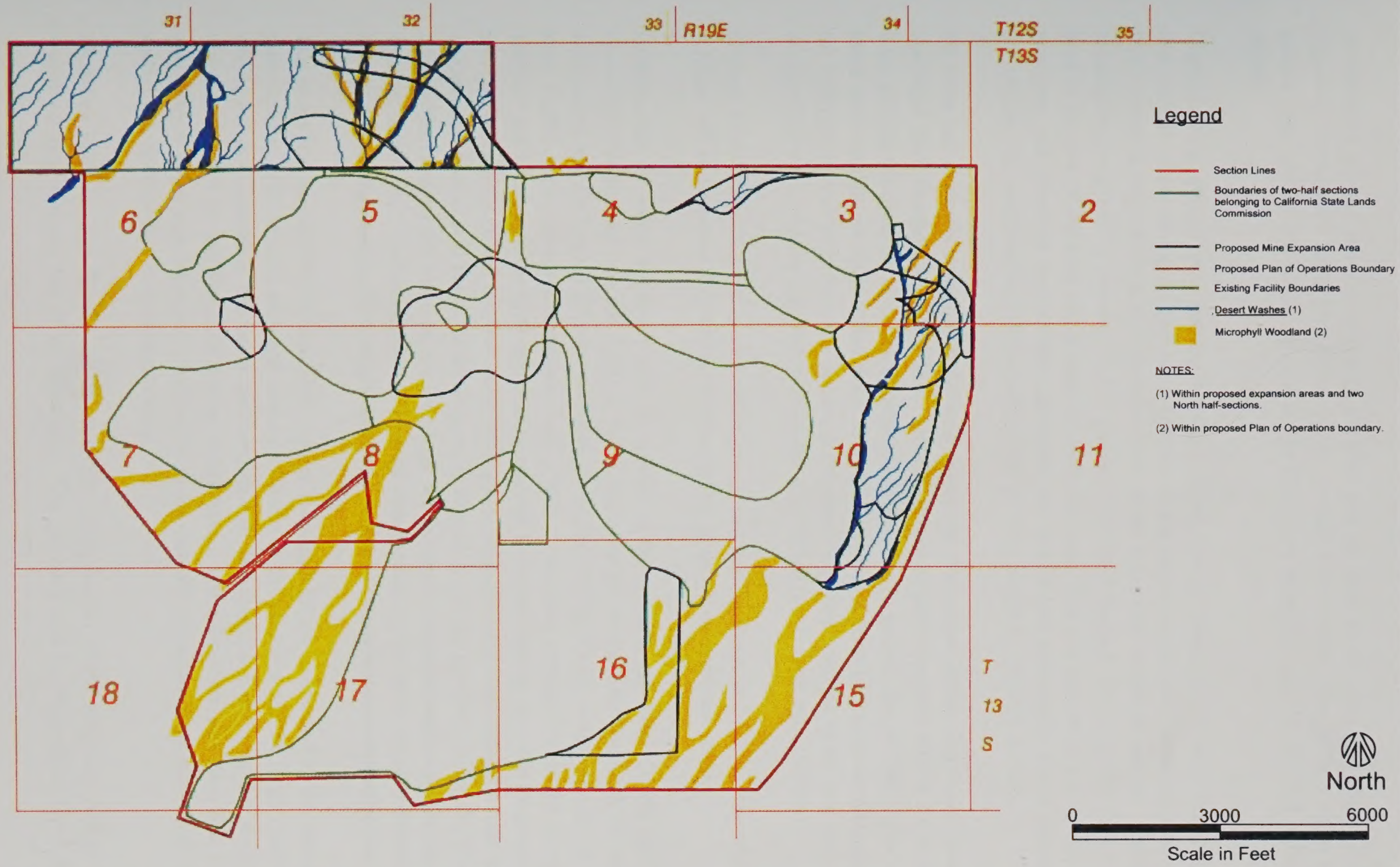
Incorporated by Regulations

The Applicant shall construct and operate the proposed expansion facilities in accordance with the rules and regulations established by the SWRCB and RWQCBs. These requirements include: 1) implementing a Storm Water Pollution Prevention Program incorporating Best Management Practices (BMPs) in acccordance with the Statewide General Construction Activity Stormwater Permit; and a stormwater quality monitoring program to evaluate the effectiveness of the program. 2) Obtaining 401 Water Quality Certification, or waiver thereof; and 3) providing post-construction BMPs that are to be maintained after construction, throughout the life of the project. BMPs for control of erosion during both construction and operation shall be implemented as part of this program.

The Applicant shall design and construct project structures (e.g.,°relocated mine buildings) that are subject to the Uniform Building Code according to Seismic Zone 4 standards, which are the most stringent in the Uniform Building Code. Implementation of Seismic Zone 4 standards would satisfy current Building Code Requirements of the Imperial County Planning and Building Department.

The ~~a~~Applicant shall implement the following measures to minimize potential effects of seismic°activity:

- ~~The Applicant shall complete final pit wall design in conformance with SMARA requirements. Pit slope parameters will be determined and reviewed by California registered civil engineers, with appropriate safety factors based on their professional experience. Final pit design shall be~~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Legend
Section Lines
Boundaries of two-half sections belonging to California State Lands Commission
Proposed Mine Expansion Area
Proposed Plan of Operations Boundary
Existing Facility Boundaries
Desert Washes (1)
Microphyll Woodland (2)
North
0
3000
6000
Scale in Feet

NOTES:

(1) Within proposed expansion areas and two North half-sections.

(2) Within proposed Plan of Operations boundary.

SOURCE: Nevada Environmental Consultants, Inc. (NECI), 2000

2/28/01

Mesquite Mine Expansion EIR/EIS

Desert Washes and Microphyll Woodland

FIGURE

4.1.2-1

chemistry of ground water surrounding the pits, and the high evaporation rate which will concentrate dissolved constituents introduced to the pit by ground water inflow. The pit lake water chemistry and ground water quality impact conclusions in this section are generally valid for the rock units planned to be mined.

During mining, ground water seeping into the pits that does not evaporate would be removed and used for dust control. After mining in each pit is completed, the respective pit lake would fill with water until the lake surface is large enough to evaporate water at the same rate as inflow occurs. Based on flow net calculations described in Section 3.2.3.1, ground water flow through the upper 300 feet of the saturated zone in the area of the mine pits is approximately 100 gpm. For this amount of steady-state flow into the mine pits, and given the approximately 80 inches per year of lake evaporation that is characteristic of the site climate, the combined total surface area of the pit lakes would be about 24 acres.

Pit lakes are expected to occur in the bottoms of the Big Chief North, Big Chief South, Big Chief Southeast, East Rainbow and Vista Pits. The actual time required for each lake to fill to its equilibrium level will depend upon the as-built configuration of the pits. In general, the individual pits are expected to reach their equilibrium level within times ranging from several years to several decades, depending upon the configuration of each pit. The depths of the lakes will vary from pit to pit, and may be shallow to relatively deep (i.e., depths may vary from on the order of ten feet to more than 100 feet).

Ground water in the pit areas is deep below the ground surface (Section 3.2.3.1). Therefore, the pit lake surfaces will be far below the pit rims and overtopping of the pit rims will not occur.

Initially, the pit water chemistry will be similar to the existing pit water (Table 3.2-7), with TDS concentrations generally in the 1,500 to 4,000 mg/L range. At the time that each pit lake reaches its equilibrium surface level, TDS concentrations are expected to generally range from about 5,000 to more than 10,000 mg/L (Baker Consultants, Inc., 1999). Because evaporation is the primary source of outflow, and because of the high evaporation rate and low precipitation, over the long-term the TDS will increase and the lakes will become saline with dissolved constituent concentrations near saturation. This evapoconcentration will result in the long-term chemistry of the pit lakes under the Proposed Action being approximately the same as the long-term water chemistry~~ described in Section 3.2.3.5 for~~ of the existing mine pits. ~~The reader is referred to that section for a more detailed discussion of water chemistry, including a comparison of pit lake water quality to certain water quality standards.~~

The additional impacts that would occur for the Proposed Action (compared to the currently permitted pits) are that: (1) the total area and volume of water in the pit lakes will be larger; and (2) the rate at which, evapoconcentration will occur may be different. In general, it is expected that the individual lakes that would occur for the Proposed Action would have a volume/surface area ratio that would be either similar to or larger than lakes that would occur in the currently permitted mine pits, which would result in a similar or slower rate of evapoconcentration.

Modeling indicates that for the out-of-pit OISA configuration of the Proposed Action, ground water would not flow through any of the mine pits. The pit lakes will be evaporative sinks, and the ground

Table 4.1.2-2
Predicted Pit Lake Water Quality (ppb), Post-Mining Conditions, Mesquite Mine, CA

	Big Chief North	Big Chief South	Big Chief Southeast	East Rainbow	Vista
Open Pit Option					
Aluminum	124	196	110	87	100
Ammonia (N)	35	56	31	25	28
Antimony	11	17	9	7	<2
Arsenic	< 2	< 2	< 2	< 2	<2
Barium	7	6	7	8	7
Boron	8,010	12,820	7,080	5,590	6,410
Cadmium	< 2	< 2	< 2	< 2	<2
Calcium	1,800	1,420	1,930	2,210	2,050
Carbonate	589,000	847,000	536,000	450,000	
Chloride	1,851,000	2,933,000	1,641,000	1,301,000	1,488,000
Chromium	< 8	< 8	< 8	< 8	<8
Copper	< 6	< 6	< 6	< 6	<6
Fluoride	12,500	19,800	11,100	8,800	10,000
Iron	< 20	< 20	< 20	< 20	<20
Lead	< 3	< 3	< 3	< 3	<3
Magnesium	21,100	27,300	20,100	18,600	19,400
Manganese	< 3	< 3	< 3	< 3	<3
Mercury	< 0.2	< 0.2	< 0.2	< 0.2	<0.2
Nickel	< 23	< 23	< 23	< 23	<23
Nitrate/Nitrite (N)	2,210	3,500	1,960	1,550	1,770
Phosphate (P)	302	479	268	213	243
Potassium	33,300	52,700	29,500	23,400	26,700
Selenium	49	79	44	35	40
Silica	26,800	19,900	28,900	32,800	30,500
Silver	20	31	18	14	16
Sodium	2,538,000	4,023,000	2,252,000	1,786,000	2,041,000
Sulfate	2,187,000	3,466,000	1,940,000	1,538,000	1,758,000
TDS	7,280,000	11,400,000	6,480,000	5,180,000	5,890,000
Zinc	< 7	< 7	< 7	< 7	<7
pH	9.12	9.22	9.09	9.04	9.07
Backfill Option					
Aluminum	188	1,820	451	451	435
Ammonia (N)	270	3,750	929	929	624
Antimony	21	223	55	55	48
Arsenic	< 2	< 2	< 2	< 2	< 2
Barium	7	< 3	5	5	5
Boron	8,640	66,900	16,300	16,300	20,300
Cadmium	< 2	< 2	< 2	< 2	< 2
Calcium	1,420	568	915	915	972
Carbonate	717,000	4,400,000	1,340,000	1,340,000	1,420,000
Chloride	1,975,000	14,800,000	3,660,000	3,660,000	4,560,000
Chromium	< 8	< 8	< 8	< 8	< 8
Copper	< 6	< 6	< 6	< 6	< 6
Fluoride	13,300	83,900	24,500	24,500	30,700
Iron	< 20	< 20	< 20	< 20	< 20
Lead	< 3	< 3	< 3	< 3	< 3
Magnesium	19,300	79,700	24,000	24,000	33,000
Manganese	< 3	< 3	< 3	< 3	< 3
Mercury	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Nickel	< 23	< 23	< 23	< 23	< 23
Nitrate/Nitrite (N)	2,670	22,300	5,540	5,540	6,180
Phosphate (P)	615	6,760	1,680	1,680	1,420
Potassium	35,500	265,000	65,700	65,700	82,000
Selenium	66	541	134	134	152
Silica	24,500	5,750	16,900	16,900	14,100
Silver	30	291	72	72	70
Sodium	2,740,000	20,800,000	5,140,000	5,140,000	6,340,000
Sulfate	2,340,000	17,600,000	4,350,000	4,350,000	5,410,000
TDS	7,890,000	58,000,000	14,700,000	14,700,000	17,900,000
Zinc	< 7	< 7	< 7	< 7	< 7
pH	9.19	9.56	9.35	9.35	9.35

from SMI (2000)

recharge to the Amos-Ogilby basin. The long-term capture of ground water by the mine pits may be less because as the pit lake levels rise toward their equilibrium elevation, inflow to the pits will be reduced. In addition, the actual impact of the proposed expansion is less than quantified herein because the existing pit lakes will capture a portion of this ground water seepage over the long-term if the expansion does not occur.

4.1.2.3 Mitigation Measures

Incorporated by Regulation

The Applicant shall incorporate the following water protection features into the proposed construction, operation, and closure of the expansion as required by CCR Title 27 mining regulations administered by the RWQCB:

- Design and construct diversion and drainage facilities to accommodate precipitation conditions associated with the 100-year precipitation event.
- The heap leach pad expansion shall not be located on a Holocene Fault. (No Holocene faults exist onsite).
- The heap leach pad expansion shall be constructed with a low permeability liner system to contain process fluids.
- Containment structures shall be designed by a Registered Civil Engineer, and construction shall be supervised and certified by a Registered Civil Engineer or a Certified Engineering Geologist.
- The heap leach pad expansion shall be operated with monitoring systems to allow detection of potential process fluid leakage in the subsurface.
- The leach pad expansion shall be closed in a manner such that, after closure, it no longer poses a threat to water quality.
- The OISAs shall be closed in a manner that will minimize erosion and the threat of water quality degradation from sedimentation.
- The Applicant shall construct and operate the proposed expansion facilities in accordance with their existing State of California NPDES General Permit for Stormwater. These requirements include implementing a Stormwater Pollution Prevention Program incorporating BMPs.
- ~~The Applicant shall mitigate impacts to Waters of the U.S. as determined by ACOE in the Section 404 process. It is anticipated that such mitigation will involve preservation of appropriate acreage of waters within the proposed compensation for desert tortoise habitat.~~
- The Applicant shall submit engineered drawings for Caltrans review and approval of proposed extensions of existing erosion protection features for 60 feet on both sides of SR-78 at "Swale D."

Vegetation

The three native plant communities in the project area, desert microphyll woodland, upland succulent and creosote bush scrub, are the habitat types that would be directly impacted (see Figure 3.3-1). The proposed expansion would result in a direct loss of approximately 380 acres of cresosote/desert pavement habitat, approximately 67 acres of microphyll woodland habitat, and approximately 45 acres of upland succulent habitat. Another 15 acres of microphyll woodland would be cut off from upstream water sources south of the proposed North Diversion Channel. Blue palo verde (*Cercidium floridum*) and desert ironwood (*Olneya tesota*), associated with these three plant communities would also be impacted. Suitable habitat for ribbed cryptantha and winged cryptantha was observed throughout the proposed project area, though no individuals for these species were observed. Of these three habitat communities, microphyll woodland is considered the most sensitive because it provides potential habitat for several sensitive bird, reptile and mammal species.

Based on the revegetation approach described in Sec. 2.1.7 that utilizes no supplemental irrigation except for transplanted trees or shrubs, no significant problem with growth of invasive exotic plant species in reclaimed areas is anticipated. It is possible that tamarisk trees may persist for some time in areas having high moisture. If this occurs, selective spraying of the tamarisks with an approved herbicide such as Roundup and/or Garlon will be considered, if necessary, subject all applicable regulations and to BLM approval.

Microphyll Woodland

To characterize impacts to this habitat, microphyll woodland was defined as the consisting of one or more individuals of desert ironwood, blue palo verde, and or smoke tree spaced within 100 meters of each other. Within the areas proposed for mine expansion, a total of approximately 82 acres of microphyll woodland are present.

Of the approximately 82 acres of proposed impact to microphyll woodland, approximately 23 acres (heap leach pad expansion, Section 16) are already permitted and compensated for in accordance with previous environmental mitigation. Therefore, the proposed action will result in a net impact of approximately 59 acres of microphyll woodland (44 acres direct impact, 15 acres indirect). Impacts to this 59 acres of microphyll woodland habitat would be significant. Table 4.1.3-1 shows impacts to microphyll woodland for each proposed expansion areas.

Microphyll woodland is considered by CDFG to be one indicator of CDFG jurisdictional streambeds under Section 1600 of the Fish and Game Code. The other indicator on-site is desert washes.~~, which are considered jurisdictional waters by the U. S. Army Corps of Engineers (See Section 3.2, Water).~~ The total area of CDFG jurisdictional streambeds (microphyll woodland + desert washes less the area of overlap) within the unpermitted expansion areas is approximately 25.36 acres while there are approximately 39.92 acres in areas previously permitted for Mine disturbance. Figure 4.1.2-3 shows the proposed Plan of Operations boundary and mapped microphyll woodland areas and ~~Waters of the U.S~~desert washes. Table 4.1.3-2 details CDFG jurisdictional components by expansion are

Table 4.1.3-2
~~Waters of the U.S.~~
Desert Washes and Microphyll Woodland, in Acres, by Expansion Area, Proposed Action, Mesquite Mine Expansion

Proposed Action	~~Waters of U.S.~~ Desert Washes		Microphyll Woodland		Overlap (a)		Total CDFG Jurisdiction (b)	
Expansion Area	**Prev. Permitted**	**Not Permitted**	**Prev. Permitted**	**Not Permitted**	**Prev. Permitted**	**Not Permitted**	**Prev. Permitted**	**Not Permitted**
North Exten. Big Chief Pit	0	1.84	0	8	0	1.68	0	~~8.14~~8.16
Big Chief Pit S/SE Exten. (c)	0	0	0	0	0	0	0	0
East Rainbow Pit Extension	3.68	0.7	5	4	0.02	0.08	8.66	4.62
Big Chief West OISA	0	0	0	0	0	0	0	0
East Rainbow North OISA	1.7 (d)	0	1	0	0	0	2.7	0
East Rainbow South OISA	8.25	3.48 (d)	12	0	0	0	20.25	3.48
E. Rainbow Diversion Channel	2.3	0.24	6	1	0.04	0.04	8.26	1.2
North Extension Diversion Channel	0	2.78	0	7	0	2	0	7.78
Heap Leach Pad No. 6 Expansion (e)	NA	NA	NA	NA	NA	NA	NA	NA
TOTALS	**15.93**	**9.04**	**24**	**20**	**0.06**	**3.8**	**39.87**	**25.24**
TOTALS	**24.97**		**44**		**3.86**		**65.11**	

Source: Jones & Stokes, 1999 and 2000; NECI, 2000; BRG Consulting, 2000

(a) Areas where microphyll woodland is found in ~~drainages meeting ACOE definitions for jurisdictional waters~~desert washes

(b) The sum of estimated acres of desert washes plus microphyll woodland acres, less the area of overlap.

(c) The area was previously disturbed by ancillary mining activities.

(d) Extrapolated by BRG from Jones & Stokes data.

(e) All of Section 16 was previously permitted for heap leach pad disturbance, and compensated.

chuckwalla in the vicinity, it is possible that a population exists within the proposed project area. Impacts to this species would not be significant, based on the thousands of acres of such habitat that is available in the general vicinity of the Proposed Project.

Proposed Expansion Areas

Table 4.1.3-3 qualitatively summarizes impacts for each proposed expansion area. Both significant and non-significant impacts prior to mitigation are included in this table. However, all impacts are mitigated to a level less than significant as a result of the proposed mitigation measures, discussed in Section 4.1.3.4.

4.1.3.4 Mitigation Measures

This section presents mitigation measures for plant and animal communities within the Proposed Action area of influence. Special emphasis is placed on species listed as threatened or endangered, having the potential to be affected by the Proposed Action. The primary species of concern that would be affected by the Proposed Action is the desert tortoise. Mitigation for this and others potentially affected sensitive species are described in this section.

During the life of the project, the construction, maintenance, and other activities that have the potential to impact sensitive species will undergo environmental review by a qualified biologist and appropriate agencies. Through mitigation monitoring, the effectiveness of mitigation measures shall be evaluated throughout the life of the facility and may be modified, based on new information and/or new technology. Significant changes to project design, or activities that may affect a listed species and which effects were not considered during the Section 7 consultation, will require re-initiation of applicable Endangered Species Act consultation. Additionally, if new information becomes available on listed species or impacts to listed species, or if the incidental take limit is exceeded, re-initiation of applicable Endangered Species Act consultation will also be required.

The mitigation measures presented in this section include those utilized for other similar actions at the Mesquite Mine in the past. These measures were derived from a Biological Opinion (1-6-98-F-39) on the "Proposed Mesquite Mine Exploratory Drilling Project, Imperial County, California" (July 7, 1998); a Biological Opinion (1-6-97-F-34) titled "The Proposed Gunnery Range Land Exchange, Chocolate Mountains, Imperial County, California"(April 14, 1997); a Biological Opinion (1-6-92-F-28) for "Small Mining and Exploration Operations in the California Desert" (June 1, 1992); and a Biological Opinion (1-6-92-F-22) for the "Continued Operations of Gold Fields Operating Company's Mesquite Mine" (March 26, 1992). Subsequent to publication of the Mesquite Mine Expansion Draft EIR/EIS in August 2000, the original draft biological mitigation measures were augmented and were consistent with biological mitigation measures contained in Biological Opinion 1-6-92-F22R3, August 10, 2001, prepared by the U.S. Fish and Wildlife Service.

General Mitigation Measures

1. At the end of the project, disturbed areas, including new access roads, should be re-contoured and re-seeded with an appropriate mixture of native plant species according to the Reclamation Plan. All new mitigation measures included in the Reclamation Plan shall be implemented. ~~All desert tortoise-proof fences should be removed also according to the Reclamation Plan.~~

2. At the end of mining operations, all fences should be removed except for those required by mitigation measure 51.

Table 4.1.3-3
Summary of Proposed Action Biological Impacts By Proposed Expansion Area

Proposed Expansion Area	Vegetation Impacts	Wildlife Impacts
North Extension Area Big Chief	Loss of habitat for ribbed cryptantha, and winged cryptantha,	Loss of habitat for desert tortoise, western chuckwalla (ns), bighorn sheep (ns), and foraging habitat for the prairie falcon (ns).
North Drainage Diversion	Loss of habitat for the fairy duster, ribbed cryptantha, winged cryptantha,	Loss of habitat for desert tortoise, mule deer (ns), bighorn sheep (ns), burrowing owl (ns), and foraging habitat for the prairie falcon (ns).
Big Chief West OISA	Loss of habitat for the ribbed cryptantha and winged cryptantha	Loss of habitat for desert tortoise and western chuckwalla (ns), and foraging habitat for the prairie falcon (ns).
East Rainbow North OISA (previously permitted)	Loss ~~>~~≤ 20 individuals of fairy duster Loss of habitat for the ribbed cryptantha and winged cryptantha	Loss of habitat for desert tortoise, mule deer (ns), bighorn sheep (ns), burrowing owl (ns), and foraging habitat for the prairie falcon (ns).
East Drainage Diversion	Loss of habitat for the fairy duster, ribbed cryptantha and winged cryptantha,	Displacement of one desert tortoise. Loss of habitat for the desert tortoise, mule deer (ns), bighorn sheep (ns), burrowing owl (ns), and foraging habitat for the prairie falcon (ns).
East Rainbow Extension	Loss of approximately 5-10 individuals of fairy duster Loss of habitat for the ribbed cryptantha and winged cryptantha	Displacement of one desert tortoise. Loss of habitat for the desert tortoise, mule deer (ns), bighorn sheep (ns), burrowing owl (ns), and foraging habitat for the prairie falcon (ns).
East Rainbow South OISA	Loss of habitat for the fairy duster, ribbed cryptantha, winged cryptantha, and slender lobed 4 o'clock flower,	Displacement of one desert tortoise. Loss of habitat for the desert tortoise, mule deer (ns), bighorn sheep (ns), burrowing owl (ns), and foraging habitat for the prairie falcon (ns).
Leach Expansion (previously permitted and compensated)	Loss of ~~>~~≤ 23 individuals of fairy duster Loss of habitat for the ribbed cryptantha and winged cryptantha	Displacement of one desert tortoise. Loss of habitat for desert tortoise, mule deer (ns), bighorn sheep (ns), and foraging habitat for the prairie falcon (ns).

Source: NECI (ns) = impact less than significant

~~2~~3. Access ~~should~~ shall be confined to approved routes to reduce impacts brought about by road proliferation.

~~3~~4. All bladed vegetation and excavated materials ~~should~~ shall be stockpiled in such a manner that ~~they~~ does not obstruct the natural flow of water down wash systems.

~~4~~5. Destruction of vegetation, particularly cacti and patches of herbaceous plants, shall be avoided whenever possible.

~~5~~6. All soil compacted during mining activities ~~soil (except desert pavement)~~ shall be scarified upon completion of mining activities. This may be done by using rippers, discs, rakes or other appropriate equipment.

~~6~~7. ~~Storage of e~~Equipment, supply material, ores ~~or any~~and mining operation residue ~~of the mining operation~~ shall be ~~accomplished~~ stored in a manner~~, which~~ that minimizes surface disturbance. ~~As identified in the Revised POO, and to the extent practicable, all pits should be backfilled.~~

8. Pits shall be backfilled to the maximum extent practicable.

~~7~~9. Impacts to CDFG jurisdictional streambed shall be mitigated at a 3:1 ratio, in accordance with permits issued by CDFG under Section 1600 et seq. of the Fish and Game Code.

~~8~~10. Impacts to ~~waters of the U.S., and associated~~ microphyll woodland habitat~~, will~~ shall be mitigated~~ through 1) preservation of at least 3 times the acreage of such habitat (~~ at a 3:1 ratio ~~mitigation ratio) within the desert tortoise compensation area described below, and 2) through revegetation of microphyll woodland habitat along~~ by a) preservation of off-site habitat and b) by restoration of 3.8 miles of drainage diversions to microphyll woodland.~~ within the mine. The actual amount of waters and microphyll preserved is dependent on the alternative approved and the specific compensation lands chosen~~.

~~9~~11. ~~Newmont staff members or q~~Qualified biologists ~~biological consultants~~ will conduct a reconnaissance for potential sensitive species in areas proposed for disturbance in the wet season prior to that disturbance.

~~10~~12. Mine pit walls within twenty feet above and below the projected long-term water levels will be designed to be as steep as possible, to minimize the development of vegetation that could serve as dietary pathways for ingestion of harmful compounds by birds and animals, while complying with all applicable slope stability requirements.

Species-Specific Impacts

Desert Tortoise

The following reasonable and prudent measures are proposed as necessary and appropriate to minimize the impacts of incidental take of desert tortoise:

~~1~~13. On-site biological supervision/monitoring, along with fencing, clearance surveys and relocation efforts, shall be utilized to reduce the likelihood of harm/harassment to the desert tortoise.

~~2~~14. Employee education programs, designated work areas, and defined operational procedures~~,~~ shall continue.

15. Reclamation ~~efforts, and a Microphyll Woodlands assessment~~ shall occur to minimize the impact of mine-related operations on ~~both~~ the ~~desert~~ tortoise and ~~the species' associated~~tortoise habitat.

To be exempt from the prohibitions of Section 9 of the Act, compliance must meet with the following terms and conditions. These implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

~~1~~16. Compensation for loss of habitat is necessary according to BLM requirements. Current requirements are based on a formula presented in Recommendations for Management of the Desert Tortoise in the California Desert (BLM, 1988), Instruction Memorandum CDD93-13, Instruction Memorandum CDD95-14, and Compensation for the Desert Tortoise, Desert Tortoise Management Oversight Group, 1999. The project proponent shall choose one of the following: 1) Acquire compensation lands. The location of these lands is to be determined jointly by BLM and CDFG. They will be located in the Chuckwalla Bench Area of Critical Environmental Concern (ACEC). The deed for these lands is to be delivered to the BLM. Or the project proponent shall 2) provide adequate funds (the amount to be determined by the BLM) to the BLM for the acquisition of compensation lands. These lands will be located in the Chuckwalla Bench ACEC. ~~The last choice is for the project proponent to 3) make permanent improvements to desert tortoise habitat. This must be upon agreement with the Fish and Wildlife Service (the Service), CDFG and BLM.~~

For the Proposed Action, the applicant shall acquire 1309.5 acres of tortoise habitat within the Chuckwalla Bench ACEC to compensate for the loss of 291 acres of Category II habitat, and 216 acres of Category III habitat, and transfer these lands to BLM ownership to be protected as desert tortoise habitat. To compensate for the loss of 82 acres of microphyll woodland associated with the Mesquite Mine Expansion, 246 acres of land transferred would be microphyll woodland. In lieu of acquiring compensation acreage, the project proponent may supply BLM funds adequate to acquire such acreage or make permanent improvements to desert tortoise habitat, as approved by the Service. ~~compensation ratio in Category III habitat is 1:1(130 acres in Category III habitat; 130 acres to be compensated); in Category II habitat the ratio is 4.5:1 (291 acres in Category II habitat; 1,310 to be compensated) for a total of 1,440 acres to be compensated.~~ For the Reduced Footprint Alternative the applicant would acquire 1,206 acres of tortoise habitat to compensate for the loss of 268 acres of Category II habitat, and 188 acres of tortoise habitat to compensate for the loss of 188 acres of Category III habitat. Within the 1,394 acres of compensation acreage, 243 acres of microphyll woodland would be required. ~~the compensation ratio in Category III habitat is 1:1 (109 acres in Category III habitat; 109 acres to be compensated); in Category II habitat, the ratio is 4.5:1 (246 acres in Category II habitat; 1,107 to be compensated) for a total of 1,216 acres to be compensated.~~

The mine operator must work closely with the BLM in selecting the lands most benefiting the conservation and recovery efforts. Compensation requirements shall be agreed upon prior to permitting. NECI Biological Report, Appendix F shows the equation used to determine compensation ratios.

~~2~~17. The Mine operator shall designate a field contact representative (FCR) who ~~will~~ shall be (1) responsible for overseeing compliance with protective measures for the desert tortoise, (2) involved in compliance coordination with the BLM, and (3) authorized to halt any mine-related actions that may be in violation of the biological opinion. The FCR (a contract biologist, company environmental coordinator, project manager, or other appropriate mine employee) shall retain a copy of the tortoise stipulations and be available on-site for all project activities.

~~3~~18. Only the authorized biologist (a Service-and BLM-approved wildlife biologist demonstrating experience in the proper handling of desert tortoises, and locating tortoises and their sign. and other persons confirmed by the ~~Fish and Wildlife~~ Service, under the auspices of the current Biological Opinion, ~~shall be~~are permitted to handle/relocate desert

tortoises. ~~The Service and BLM must approve the wildlife biologist who must demonstrate experience in the proper handling of desert tortoises and locating tortoises and their sign.~~ The BLM shall submit the names and credentials of individuals to the Service for review and approval at least 15 days prior to the onset of any mine-related operations. No excavation/surface disturbing activities ~~will~~ shall commence until the authorized biologist has been selected. A biological monitor or the authorized biologist shall be present during all surveying efforts (excluding archaeological work), any power line construction, overbuilding activities, pipeline installation, water well excavation, or road realignments. The qualified biologist must have had education/training/experience in conducting surveys, monitoring/ supervising project operations, and implementing tortoise avoidance and minimization measures.

~~4~~19. ~~The~~ During exploration activities the biological monitor/authorized biologist shall regularly inspect (a minimum of three times per day) ~~any~~ open trenches and test holes ~~or associated open trenches, if any~~. Entrapped tortoises/wildlife ~~will~~ shall be permitted to move from harm's way or carefully removed from the excavation site by the authorized biologist. A final inspection of trenches and holes shall be conducted by the biological monitor/authorized biologist just prior to backfilling. All test holes shall be immediately capped/sealed upon completion of drilling.

~~5~~20. Desert tortoises may only be handled by the authorized biologist or FCR in the case of an emergency, and only when necessary. Any desert tortoise relocated or otherwise removed from areas with mine-related construction/excavation shall be handled in accordance with the procedures described in *Guidelines for Handling Desert Tortoises During Construction Projects* (DTC 1994, revised 1999). All tortoises shall be translocated to ~~an~~ sites identified ~~tortoise relocation site~~and approved by the Service and BLM prior to clearance and relocation.

~~6~~21. BLM, in ~~consultation~~ conjunction with ~~the appropriate regulatory agencies and the proponent, will~~Mesquite Mine personnel and the Service, shall identify several relocation areas for the relocation of desert tortoises within the vicinity of the Mesquite Mine. These areas ~~will~~ shall be at least 0.5-1.0 mile apart in suitable Microphyll Woodland habitat and a reasonable distance from paved roads and extensively used dirt roads. In order to reduce ~~potential~~ competition, no more than two tortoises ~~should~~ shall be relocated in each area.

~~7~~22. The authorized biologist shall maintain a complete record of every desert tortoise encountered and moved from harm's way during all mine-related efforts. At a minimum, the information shall include: location (written description and map) of the tortoise finding, date and time of observation, ~~and~~ along with details of the relocation site; tortoise life history information (i.e., weight, length, width, height, and sex); general condition and health, including any apparent injuries/state of healing and occurrence of bladder voiding upon handling; and diagnostic markings (e.g., identification number or previously marked lateral scute).

~~8~~23. Desert tortoises removed/relocated from the mine site or ancillary areas shall be marked for future identification. An identification number (using the acrylic paint/epoxy technique) ~~will~~ shall be affixed to the fourth costal scute (Service 1990b), and a 35 mm photograph (slide) of the carapace, plastron, and fourth left costal scute shall be obtained. No notching or replacement

of fluids by injection (i.e., syringe) shall be authorized. Any water basins, bowls, or other containers provided to a tortoise for re-hydration shall be promptly removed from the field following determination by the authorized biologist that adequate fluid replacement has occurred.

~~9~~24. Upon locating a dead or injured desert tortoise, the permittee shall notify BLM ~~will be notified~~ within 24 hours. The BLM ~~must~~ shall then notify the ~~appropriate field office of the~~ Service's Carlsbad Field Office (760)431-9440 by telephone within three days of the finding. Written notification to BLM and USFWS ~~must be~~shall occur within fifteen days of the finding. The information provided must include the date and time of the finding or the incident (if known); location of the carcass; a photograph; cause of death~~, if known~~; and other pertinent information. Desert tortoise remains shall be collected, frozen as soon as possible, and delivered to the BLM. Injured animals shall be transported to a qualified veterinarian for treatment at the expense of the ~~project proponent~~mining company. If an injured animal recovers, the Service ~~should~~ shall be contacted for final disposition of the animal.

~~10~~25. The authorized biologist shall submit a summary report to the Service and BLM upon completion of the clearance surveys, relocation/handling efforts, and any injuries/deaths encountered during mine-related activities. Additionally, the report ~~will~~ shall include an evaluation of the effectiveness of the avoidance/minimization measures and possible recommendations to further reduce the direct/indirect effects of the mining operations on desert tortoise and its associated habitat.

~~11~~26. A raven monitoring program shall be conducted over the project's lifetime to determine whether mining actions promote an increase in the relative abundance of ravens, and, correspondingly, a higher predation rate on desert tortoise. Five monitoring stations ~~will~~shall be established within and around the proposed site (i.e., the center and each corner) and visited on a monthly basis. During a standard observation period (15 minutes), the biological monitor, authorized biologist, FCR, or other Service and BLM approved individual shall record raven numbers and behavior and inspect any nest sites for desert tortoise remains, along with documenting all carcasses found (i.e., number, size, relative time of death, and distance from nest). A report ~~will~~ shall be submitted to the Service and BLM before July 1st of each year, summarizing the monitoring results. A comprehensive raven management program shall be developed and instituted in the event that significant increases in raven numbers are observed over time.

~~12~~27. A desert tortoise education program shall be presented to all mine employees conducting activities at the project site, process area, or ancillary facilities. Personnel participation in the program shall precede any initiation of project actions. Following the onset of mining, new employees must formally complete the training prior to working on-site. The BLM-approved tortoise program ~~will~~ shall contain, at a minimum, the following topics: (1) desert tortoise distribution/occurrence; (2) general behavior and ecology; (3) species' sensitivity to human activities; (4) legal protection; (5) penalties for violation of State or Federal laws; (6) reporting requirements; and, (7) project protective measures, including necessary caution/awareness during commutes.

~~13~~28. A specially designed tortoise ~~proof~~ fence shall be constructed around ~~proposed disturbance areas~~the entire mine site. The fence ~~will~~ shall consist of a non-breachable barrier and support structures. Galvanized hardware cloth of 0.635 cm (0.25 in) diameter shall be attached along the base of the fence and buried a minimum of 30 cm (12 in) underground with an aboveground extension of at least 46 cm (18 in). If burial is not feasible, the bottom one-half of the fence shall be positioned flat on the ground, opposite the project/process area, and appropriately weighted (e.g., large rocks) or secured. ~~Overall, the smaller 0.635 cm (0.25 in) mesh size was selected to prevent tortoise entry into the mine site and minimize the likelihood of incidental reptile mortality. Fence-ensnared lizards could attract ravens and potentially/artificially increase predation upon the resident tortoises.~~

~~14~~29. After fence installation, the authorized biologist shall conduct a ~~thorough~~ clearance survey for ~~desert~~ tortoises within the fenced project site. All desert tortoises found shall be removed. If the removal is during the season of above ground activity, the desert tortoises shall be placed beside a burrow of appropriate size. If the removal ~~is not in the season of above ground~~occurs during a period of inactivity, ~~the~~ tortoises shall be moved from burrows dug out~~ of burrow,~~ if necessary, on a seasonably warm day and placed at the mouth of a burrow of appropriate size. If the desert tortoise does not enter the burrow, an artificial burrow may be ~~needed~~necessary. ~~The authorized biologist shall be allowed some judgement and discretion to ensure that survival of the desert tortoise is likely.~~ All tortoises shall be relocated to identified/approved areas.

~~15~~30. No later than 90 days after completion of any necessary fence construction, the FCR and the authorized biologist shall prepare a report for the BLM. The report shall document the effectiveness and practicality of the mitigation measures. Additionally, it shall include the number of desert tortoises excavated from burrows, the number of desert tortoises removed from the site, the relocation site(s), the number of desert tortoises killed or injured, and ~~the~~ specific information for each desert tortoise~~ listed above~~. The report ~~shall~~ may make recommendations ~~for modifying the stipulations to~~ regarding these measures that may enhance ~~desert~~ tortoise protection or ~~to make it more workable for the operator~~improve implementation from an operational standpoint.

~~16~~31. The fence shall be ~~regularly~~ monitored monthly and corrective action promptly taken to maintain the overall integrity of the tortoise barrier. Following storms, the fence's structure shall be assessed and immediately repaired at all damaged locations.

~~17~~32. In washes and other areas susceptible to flash flooding, "break-away" tortoise fabric may be installed. These segments shall be loosely tied to the fence on higher ground, permitting the fabric to "break-away" in the event of substantial surface flows.

~~18~~33. Small mesh nets, a solid high density polyethylene/polypropylene cover, or other appropriate screening shall be placed over the leach pad's adjoining ponds (i.e., pregnant and barren solution ponds) to prevent tortoise access and possible injury/mortality. The coverings ~~will~~ shall be regularly inspected and maintained by the applicant for the duration of the project.

~~19~~34. During the development of all ancillary facilities/features (i.e., power lines, pipeline, water wells, or road realignments) all vehicles and equipment shall be limited to established roads, designated/marked spur roads, trails, and approved rights-of-way. To the maximum extent practicable, material stockpiling, equipment storage, and vehicle parking shall occur in areas of prior disturbance or generate not greater than 0.4 ha (1 acre) of new surface impacts. Additionally, to minimize surface disturbance to the surrounding habitat, the ~~boundaries of the work areas~~authorized biologist shall ~~be~~ conspicuously stake~~d~~, flag~~ged~~, or mark~~ed~~ all work area boundaries. ~~For all project-related actions, the crushing/removal of perennial vegetation shall be avoided to the maximum extent practicable.~~

~~20~~35. ~~Any~~ All vehicles using the entry road shall not exceed a speed of 30 mph. Project-related vehicle or equipment operating on the mine's ancillary/non-haul roads shall not exceed a speed limit of 25 mph. The ~~project proponent will~~permittee shall be responsible for enforcing this speed requirement on its employees, contractors, and agents. Additionally, cross-country or off-road travel ~~will~~ shall not be permitted at any time, except under life threatening/emergency situations.

~~21~~36. Employees shall inspect beneath parked vehicles and equipment prior to traveling. If a desert tortoise is encountered, no action shall be taken until either the animal has safely and voluntarily moved away from the parked vehicle or the authorized biologist has relocated the tortoise out of ~~harm's way~~potential danger.

~~22. If it is necessary for a worker to park temporarily outside of a cleared enclosure, the worker shall inspect for desert tortoises under the vehicle prior to moving it. If a desert tortoise is present, the worker shall carefully move the vehicle only when necessary or shall wait for the desert tortoise to move out from under the vehicle.~~

~~23~~37. Desert tortoise notification and speed limit signs shall be posted and maintained within the project's boundaries. Employee parking areas ~~will~~ shall have conspicuous signs alerting personnel to the presence of tortoises. Speed limits shall be posted within the mine site and along all regularly traveled ancillary/non-haul roads.

~~24~~38. The Service and BLM~~, in consultation with the Service,~~ shall pre-approve the type(s) of chemical dust suppressant(s) used on haul/maintenance/access roads prior to their application.

~~25~~39. All trash and food items shall be promptly stored in raven and coyote proof containers and regularly conveyed from the mine site. Project structures/design ~~will~~ shall minimize the potential for raven nest or perch sites and no mining features (e.g., other buildings, power/water line enhancements, etc.) beyond the scope of the currently proposed action shall be approved or authorized.

~~26. Structures that may function as raven nesting or perching sites are not authorized except as specifically stated in the plan of operation notice. The project proponent shall describe anticipated structures to the BLM during initial project review.~~

~~27~~40. No pets shall be permitted at the project site, process area or ancillary facilities, at any time. Furthermore, firearms ~~will~~ shall be strictly prohibited, except for security personnel.

~~28~~41. Road kill found along the mine's primary access way shall be promptly removed/buried to reduce the attraction of ravens and other potential tortoise predators to the area. Additionally, no feeding of coyotes, kit foxes, or ravens shall be allowed.

~~29~~42. Upon completion of the Mesquite Mine Project, all mine-related materials and vehicles/equipment shall be promptly removed from the site. Machinery and personnel involved with the mine's subsequent reclamation shall only be permitted in the project area during the course of ~~revegetation~~ reclamation efforts. Once reclamation measures have been implemented, no associated equipment and supplies ~~will~~ shall be allowed to remain on-site.

43. In addition to the measures proposed, the California Department of Fish and Game requires that a management rate of $200/acre and a $95/acre enhancement fee, be provided to the Department for management of acquired tortoise lands. The acreage subject to the fee shall be determined as part of the 2080.1 consistency determination.

44. Tortoise exclusion fencing or chain link fencing shall be installed around the entire area undergoing mining activities, except in areas where existing chain link fencing has been modified with a berm at the base of the fence as described in Opinion 1-6-92-F-22. Currently, the area to the north of the mine site does not have tortoise exclusion fencing or modified chain link fencing. This area shall be fenced to prevent the continued ingress of desert tortoises to areas where they may be harmed.

45. Inactive burrows that will not undergo damage or destruction from mine expansion shall be flagged and avoided. Following completion of the individual support facilities, all materials utilized to mark or identify the tortoise burrows shall be promptly removed.

46. Compensation for disturbance to desert tortoise habitat is identified as part of the proposed action. This term and condition refines the proposal to acquire desert tortoise habitat as compensation for losses to desert tortoise habitat. Lands acquired by BLM to offset impacts associated with the proposed project shall be secured and deeded to the BLM prior to phased disturbance associated with the expansion.

47. BLM shall receive 50% of the necessary compensation acreage (800 acres), or funds sufficient to acquire such acreage within 6 months of expansion notification and prior to surface disturbance associated with the expansion. At least 50% of the microphyll woodland compensation lands (123 acres) (or appropriate funds to allow BLM acquisition of lands), or lands comprising a 3:1 ratio to the microphyll woodland that will be disturbed in the first phase, whichever is greater, shall be received by BLM as part of this first installment of compensation land. Subsequent land acquisition to compensate for the loss of desert tortoise

habitat associated with expansion shall occur prior to surface disturbance associated with each expansion phase.

If the final action taken on the proposed expansion is the reduced footprint alternative, the required compensation acreage will change accordingly. The reduced footprint alternative would result in surface disturbance to 268 acres of Category II habitat and 188 acres of Category III habitat, including 81 acres of microphyll woodland. BLM must receive 50% of the necessary compensation acreage (697 acres), or funds sufficient to acquire such acreage, within 6 months of expansion notification and prior to disturbance associated with expansion. At least 50% of the microphyll woodland compensation lands (121 acres) (or appropriate funds to allow BLM acquisition of lands), or lands comprising a 3:1 ratio to the microphyll woodland that will be disturbed in the first phase, whichever is greater, must be received by BLM as part of this first installment of compensation land. Subsequent land acquisition to compensate for the loss of desert tortoise habitat associated with expansion must occur prior to surface disturbance associated with each expansion phase. Appropriate funds to allow BLM acquisition of compensation lands may be transferred in lieu of land.

48. Compensation lands shall be identified on BLM maps available to El Centro Field Office staff, and protected in perpetuity for the benefit of the desert tortoise. Appropriated lands shall not be exchanged, sold, or otherwise disposed of. BLM shall retain land acquired as compensation for the purpose of desert tortoise conservation.

49. The BLM shall develop, and the Service approve, a raven monitoring plan that can be implemented to detect changes in raven abundance associated with mining activities.

50. The mine site restoration effort shall be directed towards the re-establishment of desert tortoise habitat and conducted under a Desert Tortoise Habitat Restoration Plan that is approved by the BLM and the Service.

51. Pits shall either be backfilled and slope steepness reduced to a grade negotiable for tortoise, or tortoise barrier fencing or modified chain link fencing shall be installed around the perimeter of all pits after mining is complete. BLM shall assure that fences installed are maintained in perpetuity. Backfilling or fencing is necessary to minimize ongoing incidental take that could otherwise occur if tortoises fall into steep-sided pits left open after mining.

52. Success criteria for future Wash/Microphyll Woodland, Upland Succulent, and Creosote Scrub, areas shall include density, cover, and species composition criteria, that reflect conditions suitable for desert tortoise habituation and typical of the general area .

53. As part of the Desert Tortoise Habitat Restoration Plan, revegetated areas shall be monitored under an approved monitoring plan, and maintained clear of weeds until success criteria are met. The monitoring and revegetation requirements shall remain in place including all contingency measures to insure eventual success, until the success criteria are achieved.

54. Disturbance to desert tortoise habitat within the mine site shall be minimized to the maximum extent possible by implementing all feasible means of using currently disturbed areas rather than expanding the footprints of OISAs, heap leach pads, and ancillary facilities.

Other Wildlife Species Mitigation

Bat Species

Reclamation of microphyll woodland done concurrently with mine development may reduce impacts, if any, to California leaf-nosed bat, Greater Western Mastiff bat, small-footed Myotis, Desert pallid bat, spotted bat, and Townsend's Big-eared bat.

Western Chuckwalla

~~1~~55. Avoid chuckwalla habitat whenever possible.

~~2~~56. Ensure that chuckwalla habitat that is avoided will have a corridor of an undisturbed lands connecting to habitat offsite. These avoidance and connection areas ~~will~~ shall be identified on a map prior to permitting.

Mule Deer

~~1~~57. A mule deer fence, whose design is approved by the game branch of CDFG, ~~should~~ shall be installed along the entire perimeter of the mine property. Fences ~~will~~ shall be routinely checked for breaks.

~~2~~58. Attractive process water ~~will~~ shall be fenced, contained, or otherwise made unavailable to mule deer. These deterrents ~~will~~ shall be routinely checked to assure mule deer cannot access these water sources. Death of a mule deer on the mine ~~will~~ shall be reported to CDFG within one week of occurrence.

Plant Species Mitigation

Fairy Duster

~~1~~59. Microcatchments ~~will~~ shall be installed in the reclaimed areas to provide areas of moisture enhancement and to aid in seed germination.

~~2.~~ ~~Where applicable,~~ Accessible disturbed areas will be scarified to provide more conducive surfaces and substrate conditions for natural plant propagation. *[same as measure 6]*

~~3~~60. Seeds ~~will~~ shall only be collected from plants on and in proximity to the Mesquite Mine property to enhance the potential for successful re-vegetation. These seeds shall be used in future reseeding of reclaimed areas as well as in any nursery programs conducted on-site for later transplant.

~~4~~61. Mature ~~f~~Fairy duster plants within the proposed expansion areas ~~will~~ shall be salvaged and transplanted into reclaimed areas.

~~5~~62. Cuttings from local ~~f~~Fairy duster plants ~~will~~ shall be utilized to augment population numbers.

~~6~~63. Any ~~f~~Fairy duster plants that are lost as a result of the Mine expansion ~~will~~ shall be mitigated on a 1:1 basis, either though planting of new plants in appropriate areas as described above, or through preservation of fairy duster plants located within the planned compensation lands.

Slender-lobed 4 O'clock flower

~~1~~64. ~~To the extent possible, m~~Microcatchments ~~could~~ shall be installed in any areas that will benefit from moisture enhancement and continued input of wind-dispersed seed.

~~2~~65. ~~Where applicable, d~~Disturbed areas along roads and facility areas ~~could~~ shall be scarified to provide ~~a~~ more conducive surfaces and substrate conditions for natural plant establishment.

Winged Cryptantha

~~1~~66. ~~To the extent possible, m~~Microcatchments ~~could~~ shall be installed in any areas that will benefit from moisture enhancement and continued input of wind-dispersed seed.

~~2~~67. ~~Where applicable, d~~Disturbed areas ~~could~~ along roads and facility areas shall be scarified to provide more conducive surfaces and substrate conditions for natural plant establishment.

Ribbed Cryptantha

~~1~~68. ~~To the extent possible, m~~Microcatchments ~~could~~ shall be installed in any areas that will benefit from moisture enhancement and continued input of wind-dispersed seed.

~~2~~69. ~~Where applicable, d~~Disturbed areas along roads and facility areas ~~could~~ shall be scarified to provide more conducive surfaces and substrate conditions for natural plant establishment

4.1.3.5 Level of Significance After Mitigation

The mitigation measures identified would mitigate the potential mine expansion site-related impacts, such that impacts would not be significant.

Consistency With District Rules and Regulations

The NSR requirements of Rule 207 are satisfied because of the following:

- Potential air quality impacts have been analyzed.
- Ground-level concentrations at and beyond the fence line are below California Ambient Air Quality Standards.
- BACT would be satisfied for each stationary or fugitive dust source.
- Emissions will cause no net increase of nonattainment pollutants in excess of 137 lbs/day, hence offsets will not be needed.
- Health risk assessment demonstrates that noncriteria pollutant air emissions would not cause carcinogenic nor noncarcinogenic health risks to exceed significance criteria.
- A permit to operate already exists for each stationary source at the expanded production rate of 60 million tpy.

The Mesquite Mine has operated and would continue to operate its stationary sources of air emissions in compliance with Imperial County Air Pollution Control District ~~prohibitory~~ Rules 400, 401, and 403 through 407.

4.1.8.6 Mitigation Measures

Because PM_{10} is a nonattainment pollutant in Imperial County, special attention was given to fugitive dust control measures. Control measures for the Proposed Action ~~would~~ shall continue to include the following:

- Wet drilling.
- Use of an enclosure and baghouse for loading and unloading of lime.
- Enhanced watering of unpaved roads, and activity areas (e.g., digging and loading overburden/interburden and ore into haul trucks, placing overburden/interburden on storage areas).
- Continuation of a vigorous mobile equipment maintenance program to assure good working condition and avoid excessive emissions, including the use of low-sulfur diesel fuel.
- Monitoring of 24-hour PM_{10} concentrations at four perimeter stations to assure that no excessive fugitive PM_{10} travels offsite.

The generation of fugitive PM_{10} on unpaved roads ~~would~~ shall be reduced ~~by at least 80 percent~~substantially, using chemical dust suppressants, ~~as shown in this analysis,~~ or other techniques with equivalent effect. Chemical dust suppressants do not need to be repeatedly applied to previously disturbed areas and wind erosion areas as long as mobile equipment is prevented from breaking the crust that tends to form on these soils. The formation of crust is considered equivalent to 80 percent control on such areas. Further, the mine has reseeded over 500 acres to reduce dust generation.

- The Applicant shall construct a six- to eight-foot-high industrial fence, except where existing fencing can be utilized. All proposed expansion areas would be fenced where necessary for security and to avoid unauthorized entry. ~~All new fencing surrounding the proposed mine expansion site would be constructed according to BLM specifications for tortoise fencing. Existing fencing has been improved in places to exclude desert tortoises from entering the Mesquite Mine. The existing fences would be further improved if required to successfully conclude consultation under Section 7 of the Endangered Species Act.~~

4.1.14.4 Level of Significance After Mitigation

With the implementation of required mitigation measures, impacts would not be significant.

these three plant communities would also be impacted. Suitable habitat for ribbed cryptantha and winged cryptantha was observed throughout the proposed project area, though no individuals for these species were observed. Of these three habitat communities, microphyll woodland is considered the most sensitive because it provides potential habitat for several sensitive bird, reptile and mammal species.

Based on the revegetation approach described in Sec. 2.1.7 that utilizes no supplemental irrigation except for transplanted trees or shrubs, no significant problem with growth of invasive exotic plant species in reclaimed areas is anticipated. It is possible that tamarisk trees may persist for some time in areas having high moisture. If this occurs, selective spraying of the tamarisks with an approved herbicide such as Roundup and/or Garlon will be considered, if necessary, subject all applicable regulations and to BLM approval.

Microphyll Woodland

To characterize impacts to this habitat, microphyll woodland was defined as the consisting of one or more individuals of desert ironwood, blue palo verde, and or smoke tree. Within the areas proposed for mine expansion under the Reduced Footprint Alternative, a total of approximately 80 acres of microphyll woodland are present.

Of the approximately 80 acres of proposed impact to microphyll woodland, approximately 23 acres (heap leach pad expansion, Section 16) are already permitted and compensated for in accordance with previous environmental mitigation. Therefore, the proposed action will result in a net impact of approximately 57 acres (net) acres of microphyll woodland (42 acres direct impact, 15 acres indirect). Impacts to this 57 acres of microphyll woodland habitat would be significant. Table 4.2.3-1 shows impacts to microphyll woodland for each proposed expansion areas.

Microphyll woodland is considered by CDFG to be one indicator of CDFG jurisdictional streambeds under Section 1600 of the Fish and Game Code. The other indicator on-site is desert washes~~, which are considered jurisdictional waters by the U. S. Army Corps of Engineers (See Section 3.2, Water)~~. The total area of CDFG jurisdictional streambeds (microphyll woodland + desert washes less the overlap) within the unpermitted expansion areas is approximately 23.4 acres, while there are approximately 37.8 acres in areas previously permitted for Mine disturbance. Figure 4.1.2-3 shows the proposed Plan of Operations boundary and mapped microphyll woodland areas and ~~waters of the U.S~~desert washes. Table 4.2.3-2 details CDFG jurisdictional components by expansion area.

The vegetated areas that would be disturbed by the project represent a very small percentage of similar vegetation communities that occur in the project vicinity and in the Colorado Desert as a whole. As such, the project area is not considered a significant portion of the available plant community. Undisturbed adjacent areas throughout the region provide similar habitat for plant species. Because the proposed project would be located in plant communities that are widely distributed, it would not significantly reduce the overall species diversity or population of any plant species within the Colorado Desert.

Because of these factors, it is unlikely that air emissions from operating the Landfill will occur before air emissions from the Proposed Action have ceased. Hence, cumulative effects on air quality are not expected to occur.

4.4.3.5 Visual Resources

Each of the identified cumulative projects are located, at least in part, on or adjacent to public lands administered by the BLM within the CDCA. However, except for the immediately adjacent Mesquite Regional Landfill, no more than one of the cumulative projects is visible from any important viewing location at any one time. Direct visual quality impacts from the Proposed Action have been determined to not be significant (See Section 4.1.11).

When considered with the Mesquite Landfill development, impacts to visual quality would increase. The proposed landfill would encroach on to the existing heap leach pads in Area 16 as shown in Figure 2.1-1 in Chapter 2. The heap leach pads in that area would be used as soil cover for the landfill, as would the OISAs. Over time, the heap leach pads and the OISAs would thus become smaller, but would be superseded by adjacent mounds of Municipal Solid Waste, covered with material from the heap leach pads. ~~There would be no change to the Mine OISAs.~~ The proposed landfill would be directly adjacent to the southeastern edge of the Mesquite Mine project boundary, which lies within a few feet of SR-78. The proposed landfill would extend to heights of approximately 375 to 475 feet. The resultant form would be that of a large, contoured hill somewhat similar in texture but lighter in color than natural topographic features in the project vicinity. The landfill would cover an area of approximately three miles by one and one-half miles and would be a long-term, permanent change to the local visual environment. In addition, the landfill would not be consistent with BLM's Visual Resource Management System Guidelines because it would demand attention, would not be overlooked, and would be dominant in the landscape. Visual changes associated with the Proposed Action would add to these impacts. Cumulative impacts to visual resources are considered significant and unmitigable.

4.4.4 Environmental Resources Located on 561 Acres of the Two North Half-Sections

4.4.4.1 Introduction

This section briefly describes the environmental resources located on 561 acres of the two north half-sections that are not proposed for development as part of the Proposed Action. It is not possible to identify future environmental impacts to these resources because there is no proposal to disturb these lands at this time.

4.4.4.2 Environmental Resources

Geology/Soils/Seismic Issues - as with the Proposed Action, additional mine development in the two northern half-sections could potentially result in additional erosion or seismic impacts; however, like the proposed Mine expansion, it is anticipated that all such issues could be mitigated.

Partial response to Comment 26-5 ***Responses to Comments from California State Lands Commission, April 7, 1999***

Category Codes: A - *Addressed in EIR/EIS* N/A – *Not applicable*

No.	Comment	Categ.	EIR/EIS Section / Additional Discussion
1.	Discuss the full range of environmental issues under CEQA.	A	Chapters 3 and 4
2.	Particular attention should be given to potential impacts to biological resources, including, but not limited to rare, endangered, and threatened plant and animal species such as Desert Tortoise, Munz' Cholla and Nelson's Bighorn Sheep.	A	Chapters 3 and 4
3.	Maps and cross-sections prepared for the environmental document should clearly distinguish the State's ownership.	A	See Figure 1.3-4
4.	The DEIR should include information on current site conditions, including biological, cultural and scenic resources. Specific data should be provided on the Desert tortoise, Munz's Cholla, and Nelson's Bighorn Sheep at the site and on adjacent lands.	A	See Chapter 3, Sections 3.3, 3.4 and 3.11.
5.	The environmental document should list all other responsible and/or trustee agencies for the proposed project.	A	See Ch.1, pages 1-18 through 1-27.
6.	The document should contain: 1) an assessment as to the effectiveness and potential impacts of the Proposed Mine Closure and Reclamation Plan; and 2) recommendations,as necessary, to improve its effectiveness in the restoration of mined areas to as near their original state as is feasible.	N/A	BRG did no independent review of the Closure/ Reclamation Plan effectiveness; the plan was deemed reasonable, based on Bamberg's recent prior reclamation experience with American Girl and other local mines. No Reclamation Plan changes were identified as needed to improve the resulting environment, and no Plan impacts were identified by any technical discipline.
7.	In the event that detoxification using fresh water does not work, the applicant is proposing to utilize microbial processes to detoxify the site. Potential environmental impacts to biological and water resources from this method should be addressed. Mitigation measures to reduce impacts from this process should also be identified. Please also provide, if available, evidence that this method has been approved by the Regional Water Quality Control Board for other heap leach mines in California.	A	Site detoxification will utilize fresh water only (see DEIR/EIS p. 2-13, and pages B-13 and B-14 of the 11/99 POO.

8.	The project proposes to abandon, in place, the solution pond liners. The DEIR should describe what these liners are made of, how the applicant will verify that the liners are not contaminated with toxic materials, how long they are expected to remain in the environment and the potential impacts from leaving the liners in place versus removing them. Has abandonment of comparable pond liners in place been approved for other mine closures in California?	A	The liner materials are described on p. B-9 of the 11/99 POO. Pond liners consist of a double layer of high density polyethylene (HDPE) with an HDPE floating pond cover. As part of pad closure, the ponds will be thoroughly rinsed and tested for toxic constituents. Following confirmation that hazardous constituents are not present, the liner will be detached from its earthen anchors, folded in on itself and buried in place. This will involve covering the liner with nearby alluvial gravels to a depth of approximately 20 feet. There will be no adverse environmental impact from this in situ disposal of the pond liner. This method of liner disposal is standard practice and has been approved at various locations in the State.
9.	The DEIR should also provide complete references and/or reports regarding revegetation studies conducted at the Mesquite Mine. Complete references and/or reports should also be provided for revegetation testing programs at the two nearby mines.	A	Revegetation studies at Mesquite Mine are referenced on DEIR/EIS page 2-22, and are detailed in Attachment 1 of the 11/99 POO. References for the revegetation testing programs at the two nearby mines are provided in the Errata sheets for the EIR/EIS. Complete reports on computer disk as files (in Word or WP) are available for the three testing programs upon request.
10.	The document should provide complete details on plantings. How long and under what conditions will the seeds, collected for revegetation, be stored prior to planting? Will seed viability studies be conducted on collected material prior to planting?	A	Proposed planting procedures are discussed on DEIR/EIS pages 2-24 and 2-25, and in pages B-19 through B-23 of the 11/99 POO. Seeds will be collected and sown immediately during revegetation testing and concurrent reclamation whenever graded surfaces are available. Additionally, during seed collection, areas with invasive species will be avoided. Proper seed storage will be implemented if necessary and will include fumigation or treatment with an insecticidal dust. Seed to be sown immediately is not processed. Seed to be stored will be mixed, large debris removed, and treated with a herbicide /fungicide. Seed for aerial seeding will be processed for uniform size using a series of grading screens at the mine. Germination and viability cannot be tested since the bulk seed contains up to 75 species of plants with different germination requirements. Rates of seeding that have been successful in testing and reclamation programs were 4 to 5 pounds of seed per acre in approximate 18 pounds of collected materials. The seeding rate is variable depending on topography, and placements of microcatchment basins.

11	The DEIR should also describe the favorable environmental conditions under which germination is successful. Such a discussion should include, amongst other things, how often these conditions are met and how the revegetation plan will proceed in the event environmental conditions are such that germination is unsuccessful.	A	Germination issues are discussed on page B-24 of the 11/99 POO, and below. If a germination of plants is unsuccessful during a particular season, successive plantings will be done, until the plants are established, and the success criteria have been met. This will be ensured by the required financial guaranty. Seeding procedures were tested at the various test plots in the area, referenced on page 2-22 of the DEIR/EIS. Tests were conducted using the hand collected seed and sowing the seed onto prepared surfaces both by hand and using aerial seeding on larger areas more than about 10 acres. In general, there was good germination and growth of plants depending on climatic conditions. During the period from 1989 through 2000, excellent germination was observed during three growing seasons. It is recommended to seed plots in the late fall; however, the best time to sow seeds or spread salvaged surface soils is immediately after preparing the soil by fine grading or ripping; when the soil is loose. Disturbed soils form a hard crust by wetting and sun baking after a season or two, and seeds may lie on the surface if spread without raking. Seeds of desert plants lie dormant and will persist for many years in soils until conditions are favorable for germination and growth.
12	It appears that little if any "soil" suitable for plant growth will be available at the revegetation sites. How will the applicant aid in the development of soil in the biological sense, to accomplish project objectives? What are the mycorrhizal associations required by the species proposed for use in revegetated areas?	N/A	The project objective for revegetation during reclamation is to establish a self-sustaining vegetation on soil materials present after mining is complete. The substrate (soil) is not as important as microtopography and water catchment. Revegetation has been successful on these diverse mine substrates that include regraded spent leach heaps, haul roads, and overburden/interburden rock storage. Various amendments have been tested as well as irrigation, but have not improved vegetation success. Observations on reclaimed mine sites have shown that the plant species that germinate and growth generally do not require symbiotic fungi to survive and grow. The soil microbes reestablish through spores and other means of dispersal on disturbed sites as the vegetation matures and soils are weathered. The desert mushroom, Podoxon, was observed with fruiting bodies on a reclaimed site at the American Girl after three seasons. There are no practical methods for inoculation of extensive reclaimed sites. Collected seeds and the associated soil and debris contain fungal spores and soil microbes when sown.

13	The draft document should include a discussion of the objectives of pit wall stabilization and the criteria that will be utilized to determine which pit walls will require stabilization.	A	Stabilization is required by Imperial County CUPs 96-0026 and 96-0037. The slope design report: Report to Newmont Gold Company Mesquite Mine Re Short Term Pit Slopes and Cessation of Mining Pit Slopes, July, 2000 was prepared by Charles Brawner, a Canadian Professional Engineer. The final report and associated data was reviewed by Dr. Lawrence A. Hansen, California Professional Geotechnical Engineer (#2020), AGRA Earth and Environmental, who also visited the Mesquite site with Mr. Brawner to observe the existing slopes and confer with on-site mining engineers. Dr. Hansen prepared a letter indicating agreement with the analysis, conclusions and recommendations of the Brawner Report. A copy of that letter is included in the Errata section of this FEIR/EIS. The report discusses pit slope configurations both during mining and at closure, when long term stability is required. Closure pit slope designs included in the report include the placement of buttresses at the toe of the ultimate slopes mined as part of the expansion in order to increase the factors of safety to appropriate levels. Pit slopes will be evaluated using an observational approach during the course of mining to determine if modifications to the proposed pit stabilization measures is appropriate.
14	Based on information provided to us by the applicant, reclamation success will be based on vegetation diversity, density and cover. The document should explain if perennial species and annual species will be monitored and why. Will the applicant use pre-mined conditions on those sites proposed for expansion to base reclamation success? Site selection for “control” (non-mined) sites should be selected to match as closely as possible the slope, aspect, and elevation found on the proposed revegetation sites.	A	The DEIR/EIS, page 2-26, and the 11/99 POO, page B-33, describe that reclamation success will be based upon plant density of perennial plants. The control for each site will be the pre-mine baseline vege-tation described in DEIR/EIS App. B. Perennial species as density and cover values and annual cover will be monitored using appropriate techniques. These parameters will provide an adequate measure of success. Pre-mined conditions were measured on the expansion areas but do not correspond to the type of revegetation on reclaimed sites. Therefore, control sites will be selected to match the type of vegetation on the reclaimed sites.
15	The document should provide an explanation of the methodology and the number of years over which monitoring will take place on both “control sites” and “impact sites” and should explain the adequacy of the different approaches for each type of site.	A	Monitoring is described briefly in the DEIR/EIS, page 2-26, and in the 11/99 POO, pp. B-32 - B-36.

Mitigation Monitoring and Enforcement Reporting Plan (MMERP), Proposed Mesquite Mine Expansion

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
G-1	The Applicant shall implement a Storm Water Pollution Prevention Plan (SWPPP) incorporating Best Management Practices (BMPs) in accordance with the Statewide General Construction Activity Stormwater Permit.	SWRQB Water Quality Order No. 97-03-DWG	Colorado River RWQCB	Prior to construction through life of operation; follow up during monthly & quarterly inspections for storm water & non-storm water discharges. Annual comprehensive site evaluation. Report annually.	Review design to ensure use of BMPs; inspect site to verify implementation of BMPs. Inspections for storm water and non-storm water discharges. Annual comprehensive site evaluation.	Receipt of notice that post-closure maintenance is no longer required.
G-2	The Applicant shall implement a stormwater quality monitoring program to evaluate the effectiveness of the SWPPP.	SWRQB Water Quality Order No. 97-03-DWG	Colorado River RWQCB	Sample two (2) storm events during wet season (October 10 – May 31) Report Annually.	Establish sampling program to adequately test effectiveness of SWPPP. Review program design for adequacy; review Applicant annual reports prior to site inspection.	Receipt of notice that post-closure maintenance is no longer required.
G-3	The Applicant shall provide post-construction BMPs that are to be maintained after construction, throughout the life of the project, including BMPs for control of erosion during both construction and operation.	See G-1 and G-2	Colorado River RWQCB	Review prop. construction plans, monitor periodically during operation, and report annually.	Review for provision and proper operation of BMPs.	End of mine operation.
G-4	The Applicant shall design and construct project structures (e.g., relocated mine buildings) that are subject to the Uniform Building Code according to Seismic Zone 4 standards.	CUP	Imperial Co. Planning & Building Dept.	Review plans and report prior to permit approval.	Review plans and specifications for structures subject to UBC.	Issuance of building permit.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
G-5	The Applicant shall utilize and implement pit slope toe buttresses consistent with the engineered design reviewed and approved by OMR.	SMARA/ Reclamation Plan	Imperial Co. Planning & Building Department	Following submittal of plans, prior to construction.	Review Mine pit plans for compliance with SMARA requirements.	Approval of revised Reclamation Plan by the County, issuance of SMARA permit.
G-6	The Applicant shall provide benches in the pit walls at regular intervals to catch minor sliding or raveling.	SMARA/ Reclamation Plan	Imperial Co. Planning and Building Dept.	At submittal of plans, and yearly thereafter.	Review plans to see if benches were included, observation of benches during annual inspections.	From end of mine operation to closure.
G-7	The Applicant shall construct leach pad and OISA slopes with benches for stability.	SMARA/ Reclamation Plan	Imperial Co. Planning and Building Dept.	At submittal of plans, and yearly thereafter	Review plans for compliance with the requirement, inspect channels during construction, and during operation	From end of mine operation to closure.
G-8	The Applicant shall ensure that peak flow conditions in downstream desert washes are substantially the same as those that would have occurred without the proposed expansion.	Approval of Mine Plan of Operations amendment	U.S. BLM, El Centro Field Office	At review of revised Mine Plan of Operations.	Review of hydro-logic analysis regarding projected flows in washes that may be affected.	BLM approval of Mine Plan of Operations.
G-9	The Applicant shall incorporate stable channel configurations and/or protection such as riprap along all diversion channels to limit erosion.	SMARA/ Reclamation Plan	Imperial Co. Planning and Building Dept./ U.S. BLM, El Centro Field Office	At submittal of plans, and yearly thereafter.	Review plans for compliance with the requirement, inspect channels during construction, and during operation	Receipt of notice that post-closure maintenance is no longer required.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
G-10	The Applicant shall submit engineered drawings for Caltrans review and approval of pro-posed extensions of existing erosion protection features for 60 feet on both sides of SR-78 at "Swale D."	Caltrans encroachment permit	Caltrans	Prior to implementation of diversion channel changes associated with the Mine expansion.	Review plans to ensure that the required erosion protection is designed in accordance with Caltrans guidelines.	Notice that the erosion protection plans SR-78 at Swale D are approved by Caltrans.
W-1	Design and construct diversion and drainage facilities to accommodate precipitation conditions associated with the 100-year precipitation event.	SMARA/ Reclamation Plan	Imperial Co. Planning and Building Dept.	At plan review, and yearly thereafter.	Review plans for compliance; inspect channels during construction, and during operation	Receipt of notice that post-closure maintenance is no longer required.
W-2	The heap leach pad expansion shall not be located on a Holocene Fault.	WDR Order 95-016	Colorado River RWQCB	Prior to construction of the heap leach pad expansion.	Confirm that no Holocene faults exist onsite.	Approval of leach pad design by RWQCB.
W-3	The heap leach pad expansion shall be constructed with a low permeability liner system to contain process fluids.	WDR Order 95-016	Colorado River RWQCB	Prior to construction, and as part of construction QA/QC program.	Review of design prior to construction and inspection of pad construction.	Completion of pad liner system construction.
W-4	Containment structures shall be designed by a Registered Civil Engineer, and construction shall be supervised and certified by a Registered Civil Engineer or a Certified Engineering Geologist.	WDR Order 95-016	Colorado River RWQCB	At plan review, and as part of construction QA/QC program Quality assurance report following construction.	Confirm credentials of designer and construction supervisor.	Completion of containment facility construction.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
W-5	The heap leach pad expansion shall be operated with monitoring systems to allow detection of potential process fluid leakage in the subsurface.	WDR Order 95-016	Colorado River RWQCB	Review Newmont reports on a quarterly basis during operation in accordance with Monitoring and Reporting program 95-016. Inspect site, report annually.	Groundwater monitoring, monitoring of vadose wells. Monitoring of leach detection and recovery systems.	Recision of WDR Order 95-016.
W-6	The leach pad expansion shall be closed in a manner such that, after closure, it no longer poses a threat to water quality.	WDR Order 95-016	Colorado River RWQCB	Review proposed leach pad closure procedures, and review the closure report submitted following closure testing of the leach pad.	Review and inspect to ensure effectiveness of proposed closure to preclude threats to water quality; monitor closure implementation measures.	Reclassification of leach pad to Group C waste by RWQCB.
W-7	The OISAs shall be closed in a manner that will minimize erosion and the threat of water quality degradation from sedimentation.	WDR Order 95-016	Colorado River RWQCB	Monitor annually during closure/ reclamation phase, report annually.	Inspect to identify any substantive erosion, and steps taken to preclude recurrence.	Receipt of notice that post-closure maintenance is no longer required.
W-8	The Applicant shall construct and operate the proposed expansion facilities in accordance with their existing State of California NPDES General Permit for Stormwater. These requirements include … a Stormwater Pollution Prevention Program incorporating BMPs. *[also addressed in G-1 and G-2 above]*	NPDES	Colorado River RWQCB	At plan review, quarterly during facility construction, then yearly; report annually.	Review plans for NPDES compliance, inspect facilities during construction, and during operation.	Receipt of notice that post-closure maintenance is no longer required.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
W-9	The Applicant shall submit engineered drawings for Caltrans review and approval of proposed extensions of existing erosion protection features for 60 feet on both sides of SR-78 at "Swale D." *[also addressed in G-10 above]*	Caltrans encroachment permit	Caltrans	Prior to implementation of diversion channel changes associated with the Mine expansion.	Review plans to ensure that the required erosion protection is designed in accordance with Caltrans guidelines.	Notice that the erosion protection plans SR-78 at Swale D are approved by Caltrans.
W-10	The Applicant shall design and construct East Rainbow and Vista diversion channels to discharge flows at approximately the same locations and flow rates that occur presently or which historically occurred prior to the development of the mine diversion system.	SMARA/ Reclamation Plan	Imperial Co. Planning and Building Dept./ U.S. BLM, El Centro Field Off.	At plan review, and yearly thereafter.	Review plans for compliance, inspect channels during construction, and during operation	Receipt of notice that post-closure maintenance is no longer required.
W-11	The Applicant shall repair abnormal erosion and take steps to prevent further occurrence in a timely manner.	SMARA/ Reclamation Plan	Imperial Co. Planning and Building Dept./ U.S. BLM, El Centro Field Office / CSLC	Monitor and report annually during operation.	Inspect to identify any substantive erosion, and steps taken to preclude recurrence.	Receipt of notice that post-closure maintenance is no longer required.
W-12	The Applicant shall store fuels and other bulk liquids with the potential to contaminate ground water in aboveground containers within containment areas.	CUP	Imperial Co. Planning and Building Dept;	Review plans for compliance; monitor and report annually during operation.	Inspect to verify that fuels and other bulk liquids are stored in aboveground containers within containment areas.	Approval of building permits; receipt of notice that post-closure maintenance is no longer required.
N-1	The Applicant shall comply with the Imperial County General Plan, which establishes noise emissions controls for the entire County.	CUP	Imperial Co. Planning and Building Dept.	Monitor during annual site inspections, report annually.	Inspect to verify that noise levels at Mine fences do not exceed County rules.	Receipt of notice that post-closure maintenance is no longer required.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
N-2	The Applicant shall comply with the applicable Mine Safety and Health Administration (MSHA) regulations set forth in 30 CFR 56 and California Occupational Safety and Health Administration (Cal OSHA) regulations set forth in 8 CCR 5095 *et seq.* shall be implemented by the Applicant.	CUP	Imperial Co. Planning and Building Dept./ MSHA/ Cal OSHA	Monitor site safety compliance, report annually.	Inspect to verify that noise safety equipment is available, is being used by employees and visitors.	Receipt of notice that post-closure maintenance is no longer required.
A-1	The Applicant shall continue to use wet drilling.	Authority to Construct (ATC)/Permit to Operate (PTO)	Imperial County Air Pollution Control District (APCD)	Monitor during annual site inspections, report annually.	Inspect to verify use of wet drilling.	Receipt of notice that the Mine is closed and PTO has been cancelled.
A-2	The Applicant shall continue to use an enclosure and baghouse for loading and unloading of lime.	ATC/PTO	Imperial Co. APCD	Monitor during annual site inspections, report annually.	Inspect to verify use of lime loading/unloading baghouse and enclosure.	Receipt of notice that the Mine is closed and PTO has been cancelled.
A-3	The Applicant shall continue to use enhanced watering of unpaved roads, and activity areas (e.g., digging and loading overburden/ interburden and ore into haul trucks, placing overburden /interburden on storage areas).	ATC/PTO	Imperial Co. APCD	Monitor during annual site inspections, report annually.	Inspect to verify measures to minimize dust from unpaved roads.	Receipt of notice that post-closure maintenance is no longer required.
A-4	The Applicant shall continue a vigorous mobile equipment maintenance program to assure good working condition and avoid excessive emissions, including the use of low sulfur diesel fuel.	ATC/PTO	Imperial Co. APCD	Monitor during annual site inspections, report annually.	Inspect to verify that the mobile equipment is in good working condition.	Receipt of notice that post-closure maintenance is no longer required.
A-5	The Applicant shall continue monitoring of 24-hour PM_{10} concentrations at four perimeter stations to assure that no excessive fugitive PM_{10} travels offsite.	ATC/PTO	Imperial Co. APCD	Review quarterly reports prepared by mine operator, inspect and report annually.	Verify operation of PM_{10} stations.	Receipt of notice that the Mine is closed and PTO has cancelled.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
A-6	The generation of fugitive PM_{10} on unpaved roads shall be reduced substantially using chemical dust suppressants, or other techniques with equivalent effect.	ATC/PTO	Imperial Co. APCD	Monitor during annual site inspections, report annually.	Inspect to verify measures to minimize dust from unpaved roads.	Receipt of notice that post-closure maintenance is no longer required.
V-1	Following completion of Project mining activities, all buildings, equipment, supplies, and debris shall be removed to improve the visual appearance of the Project area.	CUP/ Reclamation Plan	Imperial Co. Planning and Building Dept./ U.S. BLM, El Centro Field Office	Monitor during site inspections following the end of mining activities, report annually.	Inspect to verify that all such items have been removed from the Project area.	Submittal of monitoring report that all such items have been removed.
V-2	The applicant shall ensure that project-related lighting is pointed toward the ground and not at sensitive receptors such as drivers on SR 78 and concentrations of campers in the Glamis and Boardmanville areas.	CUP	Imperial Co. Planning and Building Dept.	Monitor during site inspections, report annually.	Review the design plans and specifications, and inspect at the site to ensure that lighting is pointed toward the ground.	Receipt of notice that post-closure maintenance is no longer required.
V-3	The Applicant shall minimize the presence of reflective material on-site at night that could reflect downward pointed light up or toward sensitive receptors.	CUP	Imperial Co. Planning and Building Dept.	Monitor during quarterly site inspections, report annually.	Review the design plans and specifications, and inspect at the site to ensure absence of reflective materials.	Receipt of notice that post-closure maintenance is no longer required
V-4	The Applicant shall construct the proposed mine expansion so that it resembles a natural landform to the extent practicable. Measures to be incorporated include contouring the tops and sides of the OISAs.	CUP/ Reclamation Plan	Imperial Co. Planning and Building Dept./ U.S. BLM, El Centro Field Office	Monitor during annual site inspections, report annually.	Review construction practices for consistency with this measure.	Following end of mine operations, and prior to closure.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
V-5	In conformance with the Reclamation Plan as approved by the BLM and Imperial County, disturbed areas shall be recontoured and reseeded or revegetated with native or indigenous species complementary to vegetation found in the surrounding area.	SMARA / Reclamation Plan	Imperial Co. Planning and Building Dept. / U.S. BLM, El Centro Field Off.	Monitor during annual site inspections during closure, report annually.	Inspect to verify reclamation process and success.	Receipt of notice that post-closure maintenance is no longer required.
V-6	The potentially significant impact of night lighting on NVDs shall be mitigated by directing all new light sources downward. This would preclude light sources that are directed toward military aircraft operating over the Chocolate Mountains.	CUP	Imperial Co. Planning and Building Dept.	Monitor during site inspections, report annually.	Review the design plans and specifications, and inspect at the site to ensure that lighting is pointed toward the ground.	Receipt of notice that post-closure maintenance is no longer required
EH-1	The Applicant shall incorporate environmental health and public safety protection measures required by local, State, or federal regulations into the proposed mine expansion, design and operation, specifically, appropriate MSHA and Cal OSHA worker environmental health and public safety regulations and the continuance of established public safety measures and programs existing at the Mine.	CUP	Imperial Co. Planning and Building Dept. / MSHA / Cal OSHA	Monitor during site inspections, report annually.	Inspect to verify compliance with MSHA and Cal OSHA regulations.	Receipt of notice that post-closure maintenance is no longer required.
S-1	The Applicant shall, as required by Title 23, CCR, Section. 2580 establish an irrevocable closure fund or provide other means to ensure closure and post-closure maintenance of each classified waste management unit.	WDR Order 95-016	RWQCB	Monitor and report prior to start of construction.	Review Applicant's proposed method of financial assurances for consistency with Title 23 CCR. Verify financial assurance implementation.	Receipt of notice that post-closure maintenance is no longer required.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
S-2	A financial surety that is acceptable to the RWQCB shall be established and maintained, prior to disturbance of proposed expansion areas.	WDR Order 95-016	RWQCB	Monitor and report prior to start of construction.	Review Applicant's proposed financial assurances for consistency with Title 23 CCR. Verify financial assurance implementation.	Receipt of notice that post-closure maintenance is no longer required.
P-1	The Applicant shall supply all MSHA- and Cal OSHA required training, supplies, and equipment.	CUP	Imperial Co. Planning and Building Dept.	Monitor during site inspections, report annually.	Inspect to verify that the services are provided on site.	Receipt of notice that post-closure maintenance is no longer required.
P-2	The Applicant shall provide precipitation drainage facilities as described by Section 4.1.2 of this EIR/EIS.	Reclamation Plan	Imperial Co. Planning and Building Dept.	Monitor during construction, report annually.	Monitor construction to verify drainage conditions are met.	Acceptance of constructed facilities.
P-3	The Applicant shall provide on-site security, fire protection services, and medical services.	CUP	Imperial Co. Planning and Building Dept.	Monitor during site inspections, report annually.	Inspect to verify that the services are provided on site.	Receipt of notice that post-closure maintenance is no longer required.
P-4	The Applicant shall construct a six- to eight-foot-high industrial fence, except where existing fencing can be utilized. All proposed expansion areas shall be fenced where needed for security and to avoid unauthorized entry.	Approval of Mine Plan of Operations Amendment	U.S. BLM, El Centro Field Office	Following completion of fence construction, monitor monthly, report annually.	Inspect to verify the integrity of the fence.	Receipt of notice that post-closure maintenance is no longer required.

Most of the following biological mitigation measures are from the Biological Opinion No. 1-6-92-F-22R3, prepared August 10, 2001 by FWS personnel, but renumbered to follow the mitigation measure sequence in the EIR/EIS. The words "will" or "would" or "should" have been replaced, where needed, with the mandatory word "shall." Other additions required for clarification or consistency with the FEIR/EIS or Reclamation Plan are shown as underlined text. Measures with an asterisk (*) are from the original DEIR/EIS document, not the Biological Opinion.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-1	At the end of the project, disturbed areas, including new access roads, shall be re-contoured and re-seeded with an appropriate mixture of native plant species, as identified in the Reclamation Plan. All new mitigation measures included in the revised Reclamation Plan (October 2001) shall be implemented.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Monitor site and report annually.	Observe progress in recontouring and reseeding per Reclamation Plan.	Receipt of notice that post-closure maintenance is no longer required.
B-2	At the end of mining operations, all fences shall be removed, except for those required by mitigation measure B-51.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Inspect site following completion of mining operations.	Confirm that fence has been removed	Removal of fence
B-3	Access shall be confined to approved routes to reduce impacts associated with road proliferation.	CUP	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Monitor site and report annually.	Review access plan, determine if any new routes have been created since last inspection.	Receipt of notice that post-closure maintenance is no longer required.
B-4	All bladed vegetation and excavated materials shall be stockpiled in a manner that does not obstruct the natural flow of water down wash systems.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Prior to construction; then monitor during site inspection, and report annually.	View washes to ensure they are not obstructed with bladed vegetation or excavated materials.	Receipt of notice that post-closure maintenance is no longer required.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-5*	Destruction of vegetation, particularly cacti and patches of herbaceous plants, shall be avoided whenever possible.	CUP	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Off.	Prior to construction; then monitor during site inspection, and report annually.	Identify if areas of cacti or herb aceous plants outside of the approved expansion areas are proposed to be, or are actually disturbed in the expansion work.	Receipt of notice that post-closure maintenance is no longer required.
B-6	All soil compacted during mining activities shall be scarified upon the completion of mining activities. This may be done by using rippers, discs, rakes, or other appropriate equipment.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Following completion of mining operations, then monitor during site inspections, and report annually.	Review site to determine that all areas of compacted soil at completion of mining operations have been scarified.	Receipt of notice that post-closure maintenance is no longer required.
B-7	Equipment storage, supply material, ores, and mining operation residue shall be stored in a manner that minimizes surface disturbance.	CUP	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Review plans for compliance prior to construction; monitor quarterly during operation, report annually.	Inspect to verify that equipment, supplies, ores & mining residues are stored in areas of prior disturbance, or if not, minimize the area of undisturbed land required.	Receipt of notice that the Mine is closed.
B-8	Pits shall be backfilled to the maximum extent practicable.	Reclamation Plan	Imperial Co. Planning and Building Dept./ BLM/ California State Lands Commission	Following completion of mining.	Review Mine pit configurations for substantive compliance with approved Reclamation Plan contours.	Receipt of a letter indicating completion of mine reclamation earthmoving activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-9*	Impacts to CDFG jurisdictional streambed shall be mitigated at a 3:1 ratio, in accordance with permits issued by CDFG under Section 1600 et seq. of the Fish and Game Code.	CDFG Sec. 1603 permit	California Dept. of Fish and Game	Prior to transfer of the required compensation lands.	Determine if the acreage and habitat type of lands proposed for transfer meet the listed requirements.	Determination that the acreage and habitat type of lands transferred meet the listed requirements.
B-10	Impacts to microphyll woodland habitat shall be mitigated at a 3:1 ratio by a) preservation of off-site habitat and b) by restoration of 3.8 miles of drainage diversions to microphyll woodland.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Prior to impacts to existing microphyll woodland habitat, appropriate acreage of off-site habitat must be transferred to BLM. Prior to release of Reclamation bond, 3.8 miles of drain-age diversions must be restored to microphyll habitat.	Review acreage of microphyll woodland habitat transferred to ensure it totals at least 3 x 81 acres. Inspect the drain-age diversions to ensure that the habitat restoration meets the success criteria.	Transfer of 243 acres or more of microphyll woodland to BLM. Report that the microphyll woodland success criteria have been met.
B-11*	Qualified biologists shall conduct a reconnaisance for potential sensitive species in areas proposed for disturbance in the wet season prior to that disturbance.	BLM Record of Decision (ROD) / CUP	U.S. BLM/ El Centro Field Office / Imperial Co.	Review permittee reconnaisance report, evaluate that reconnaisance in BLM's annual report.	Rigor of recon-naissance report, identification of any sensitive species.	Completion of mine expansion.
B-12*	Mine pit walls within twenty feet above and below the projected long-term water levels will be designed to be as steep as possible (at least 1:1), to minimize the development of vegetation that could serve as dietary pathways for ingestion of harmful compounds by birds and animals, while complying with all applicable slope stability requirements.	BLM Record of Decision (ROD) / CUP	U.S. BLM/ El Centro Field Office / Imperial Co. Planning and Building Dept.	Monitor and report annually.	Describe slope steepness and vegetation development at the projected pit lake water level.	Closure of mine.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-13	On-site biological supervision/monitoring, along with fencing, clearance surveys and relocation efforts, shall be utilized to reduce the likelihood of harm/harassment to the desert tortoise.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	See specifics below in Measures B-14 through B-42.	See specifics below in B-14 through B-42.	See specifics below in B-14 through B-42.
B-14	Employee education programs, designated work areas, and defined operational procedures shall be continued.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor presentation of annual seminar; see B-27 for details.	See B-27 for details.	Completion of mine reclamation earthmoving activities.
B-15	Reclamation of the mine site shall occur to minimize the impact of mine-related operations on the tortoise and tortoise habitat.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually following mine closure, report annually.	Inspect to assure that reclamation is proceeding according to approved Plan.	Receipt of a letter indicating completion of mine reclamation activities, meeting of success criteria.
B-16	The applicant shall acquire 1309.5 acres of tortoise habitat within the Chuckwalla Bench ACEC to compensate for the loss of 291 acres of Category II habitat, and 216 acres of tortoise habitat to compensate for the loss of 216 acres of Category III habitat, and transfer these lands to BLM ownership to be protected as desert tortoise habitat. To compensate for the loss of 82 acres of microphyll woodland associated with the Mesquite Mine Expansion, 246 acres of land transferred would be microphyll woodland. In lieu of acquiring compensation acreage, the project proponent may supply BLM funds adequate to acquire such acreage or make permanent improvements to desert tortoise habitat, as approved by the Service.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Prior to initiation of mine expansion construction, appropriate acreage of off-site habitat must be transferred to BLM.	Review the acreage of habitats proposed for transfer to ensure they meet the requirements listed under the mitigation measure.	BLM receipt of title to the required lands.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-16 (Cont'd.)	(CONTINUED FROM PREVIOUS PAGE) The reduced footprint alternative identified in the EIS, if adopted, would require less compensation acreage because less surface disturbance would occur as a result of the action. The applicant would acquire 1,206 acres of tortoise habitat to compensate for the loss of 268 acres of Category II habitat, and 188 acres of tortoise habitat to compensate for the loss of 188 acres of Category III habitat. Within the 1,394 acres of compensation acreage, 243 acres of microphyll woodland would be required.					
B-17	The mine operator shall designate a field contact representative (FCR) who shall be (1) responsible for overseeing compliance with protective measures for the desert tortoise, (2) involved in compliance coordination with the BLM, and (3) authorized to halt any mine-related actions that may be in violation of the biological opinion. The FCR (a contract biologist, company environmental coordinator, project manager, or other appropriate mine employee) shall retain a copy of the tortoise stipulations and be available on-site for all project activities.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Verify designation of FCR.	Review mine compliance with protective measures for the desert tortoise.	Completion of mine reclamation earthmoving activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-18	Only the authorized biologist (a Service and BLM approved wildlife biologist demonstrating experience in the proper handling of desert tortoises, and locating tortoises and their sign) and other persons confirmed by the Service, under the auspices of the current biological opinion, shall be permitted to handle/relocate desert tortoises. The BLM shall submit the names and credentials of individuals to the Service for review and approval at least 15 days prior to the onset of any mine-related operations. No excavation/surface disturbing activities shall commence until the authorized biologist had been selected. A biological monitor or the authorized biologist shall be present during all surveying efforts (excluding archaeological work), any powerline construction, overbuilding activities, pipeline installation, water well excavation, or road realignments. The qualified biologist must have had experience /training/ education in conducting surveys, monitoring/ supervising project operations, and implementing tortoise avoidance and minimization measures.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor that the name and credentials of the person proposed to be the authorized biologist have been submitted by BLM for review by FWS at least 15 days prior to initiation of mine expansion construction, report annually.	Credentials of the proposed authorized biologist are considered acceptable by FWS.	FWS letter to BLM confirming that the proposed authorized biologist is considered acceptable by FWS.
B-19	During exploration activities, the biological monitor/authorized biologist shall regularly inspect (a minimum of three times per day) open trenches and test holes. Entrapped tortoises/wildlife shall be permitted to move from harm's way or carefully removed from the excavation site by the authorized biologist. A final inspection of trenches and holes shall be conducted by the biological monitor/authorized biologist just prior to backfilling. All test holes shall be immediately capped/sealed upon completion of drilling.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Review logs during exploration activities, report as necessary.	Review daily and monthly logs prepared by authorized biologist.	Receipt of notice that the Mine is closed.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-20	Desert tortoises shall only be handled by the authorized biologist or the FCR in the case of an emergency, and only when necessary. Any desert tortoise relocated or otherwise removed from areas with mine-related construction/excavation shall be handled in accordance with the procedures described in *Guidelines for Handling Desert Tortoises During Construction Projects* (DTC 1994, revised 1999). All tortoises shall be translocated to sites identified and approved by the Service and BLM prior to clearance and relocation.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Review reports when submitted, report as necessary.	Review relocation reports prepared by authorized biologist or FCR regarding tortoises handled.	Completion of mine reclamation earthmoving activities.
B-21	BLM, in conjunction with Mesquite Mine personnel and the Service, shall identify several relocation areas for the relocation of desert tortoises within the vicinity of Mesquite Mine. These areas shall be at least 0.5-1.0 miles apart in suitable Microphyll Woodland habitat, and a reasonable distance from paved roads and extensively used dirt roads. In order to reduce competition, no more than two tortoises shall be relocated to each area.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office/FWS/ Newmont Mining	Prior to initiation of mine expansion. Review reports as necessary.	Designate suit-able relocation areas. Map and describe the locations to which any tortoises are relocated.	Receipt of a letter indicating completion of mine reclamation earthmoving activities.
B-22	The authorized biologist shall maintain a complete record of every desert tortoise encountered and moved from harm's way during all mine-related efforts. At a minimum, the information shall include: location (written description and map) of the tortoise finding, date and time of observation, along with details of the relocation site; tortoise life history information (i.e., weight, length, width, height, and sex); general condition and health, including any apparent injuries/state of healing, occurrence of bladder voiding upon handling; and diagnostic markings (e.g., identification number or previously marked lateral scute).	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Prior to initiation of mine expansion. Review reports as necessary.	Review the log of required information regarding all tortoise relocations for completeness and compliance with requirements. .	Completion of mine reclamation earthmoving activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-23	Desert tortoises removed/relocated from the mine site or ancillary areas shall be marked for future identification. An identification number (using the acrylic paint/epoxy technique) shall be affixed to the fourth costal scute (Service 1990b), and a 35 mm photograph (slide) of the carapace, plastron, and fourth left costal scute shall be obtained. No notching or replacement of fluids by injection (i.e., syringe) shall be authorized. Any water basins, bowls, or other containers provided to a tortoise for rehydration shall be promptly removed from the field following determination by the authorized biologist that adequate fluid replacement has occurred.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Review tortoise relocation reports as received.	Review the log of required information regarding all tortoise relocations for completeness and compliance with requirements.	Completion of mine reclamation earthmoving activities.
B-24	Upon locating a dead or injured tortoise, the Permittee shall notify BLM within 24 hours. The BLM shall then notify the Service's Carlsbad Field Office (760) 431-9440 by telephone within three days of the finding. Written notification to BLM and the Service shall occur within 15 days of the finding. The information provided must include the date and time of the finding or incident (if known); location of the carcass; photograph; cause of death; and other pertinent information. Desert tortoise remains shall be collected, frozen as soon as possible, and delivered to BLM. Injured animals shall be transferred to a qualified veterinarian for treatment, at the expense of the mining company. If an injured animal recovers, the Service shall be contacted regarding the final disposition of the animal.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor and review reports as received.	Review of Newmont notifications and subsequent actions for compliance with conditions listed in mitigation measure.	Completion of mine reclamation earthmoving activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-25	The authorized biologist shall submit a summary report to the Service and BLM upon completion of the clearance surveys, relocation/handling efforts, and any injuries/ deaths encountered during mine-related activities. Additionally, the report shall include an evaluation of the effectiveness of the avoidance/minimization measures and possible recommendations to further reduce the direct/indirect effects of the mining operations on desert tortoise and associated habitat.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Within two weeks of completion of initial clearance surveys, of any relocation/ handling efforts, and any tortoise injuries or deaths.	Review the summary reports prepared by the authorized biologist.	Receipt of a letter indicating completion of mine reclamation earthmoving activities.
B-26	A raven monitoring program shall be conducted over the project's lifetime to determine whether mining actions promote an increase in the relative abundance of ravens, and correspondingly, a higher predation rate on desert tortoise. Five monitoring stations shall be established within and around the proposed site (i.e., the center and each corner) and visited on a monthly basis. During a standard observation period (15 min), the biological monitor, authorized biologist, FCR, or other Service and BLM approved individual shall record raven numbers and behavior and inspect any nest sites for desert tortoise remains, along with documenting all carcasses found (i.e., number, size, relative time of death, and distance from nest). A report shall be submitted to the Service and BLM before July 1st of each year, summarizing the monitoring results. A comprehensive raven management program shall be developed and instituted in the event that significant increases in raven numbers are observed over time.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Review required report each July.	Review annual raven monitoring report for compliance with required mitigation measures, and to determine if a comprehensive raven management program needs to be developed.	Completion of mine reclamation earthmoving activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-27	A desert tortoise education program shall be presented to all mine employees conducting activities at the project site, process area, or ancillary facilities. Personnel participation in the program shall precede any initiation of project actions. Following the onset of mining, new employees must formally complete the training prior to working on-site. The BLM-approved tortoise program shall contain, at a minimum, the following topics: (1) desert tortoise distribution/ occurrence; (2) general behavior and ecology; (3) species' sensitivity to human activities; (4) legal protection; (5) penalties for violation of State or Federal laws; (6) reporting requirements; and (7) project protective measures, including necessary caution/awareness during commutes.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Review and report annually.	Monitor the education program to determine if it is in compliance with mitigation measure requirements.	Receipt of a letter indicating completion of mine reclamation earthmoving activities.
B-28	A specially designed tortoise fence shall be constructed around the entire mine site. The fence shall consist of a non-breachable barrier and support structures. Galvanized hardware cloth of 0.635 cm (0.25 in) diameter shall be attached along the base of the fence and buried a minimum of 30 cm (12 in) underground with an aboveground extension of at least 46 cm (18 in). If burial is not feasible, the bottom one-half of the fence shall be positioned flat on the ground, opposite the project/process area, and appropriately weighted (e.g., large rocks) or secured.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Prior to initiation of the proposed mine expansion, then monitored and reported annually.	Inspect the fence for continued integrity. Note any fence-related occurrences that might result in impacts to desert tortoise.	Completion of mine reclamation earthmoving activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-29	After fence installation, the authorized biologist shall conduct a clearance survey for tortoises within the fenced project site. All desert tortoises found shall be removed. If removal occurs during the season of above-ground activity, relocated tortoises shall be placed beside a burrow of appropriate size. If removal occurs during a period of inactivity, tortoises shall be removed from burrows, dug out if necessary, on a seasonable warm day and placed at the mouth of a burrow of appropriate size. If the desert tortoise does not enter the burrow, an artificial burrow may be necessary. All tortoises shall be relocated to identified/approved areas.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Within two weeks of completion of initial clearance surveys, of any relocation/ handling efforts, and any tortoise injuries or deaths.	Review the summary reports prepared by the authorized biologist.	Completion of mine reclamation earthmoving activities.
B-30	No later than 90 days after completion of any necessary fence construction, the FCR and the authorized biologist shall prepare a report for the BLM. The report shall document the effectiveness and practicability of the mitigation measures. Additionally, it shall include the number of desert tortoises removed from burrows, the number of tortoises removed from the site, the relocation site(s), the number of tortoises killed or injured, and specific information regarding each desert tortoise. The report may make recommendations regarding these measures that may enhance tortoise protection or improve implementation from an operational standpoint.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Within 60 days after receipt of the report on any fence construction.	Review the report to determine if any changes are needed in the mitigation measures being utilized.	Receipt of the written report by BLM no later than 90 days after completion of any necessary fence construction.
B-31	The fence shall be monitored monthly and corrective action promptly taken to maintain the overall integrity of the tortoise barrier. Following storms, the fence's structure shall be assessed and immediately repaired at all damaged locations.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Inspect, and review the fence repair log and report annually.	Inspect the fence for continued integrity. Require repairs when needed at any damaged sections.	Completion of mine reclamation earthmoving activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-32	In washes and other areas susceptible to flash-flooding, "break-away" tortoise fabric may be installed. These segments shall be loosely tied to the fence on higher ground, permitting the fabric to "break-away" in the event of substantial surface flows.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Inspect, review the fence repair log and report annually.	Inspect the fence for continued integrity. Require repairs when needed at any damaged sections.	Completion of mine reclamation earthmoving activities.
B-33	Small mesh nets, a solid high density polyethylene/ polypropylene cover, or other appropriate screening shall be placed over the leach pad's adjoining ponds (i.e., pregnant and barren solution ponds) to prevent tortoise access and possible injury/mortality. The coverings shall be regularly inspected and maintained by the Applicant for the duration of the project.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Prior to mine expansion; then monitor during site inspections and report annually	Inspect to assure cover integrity, identify if/when maintenance should be required.	Closure of mine.
B-34	During the development of all ancillary facilities/ features (i.e., powerlines, pipeline, water wells, or road realignments) all vehicles and equipment shall be limited to established roads, designated/marked spur roads, trails, and approved rights-of-way. To the maximum extent practicable, material stockpiling, equipment storage, and vehicle parking shall occur in areas of prior disturbance or generate not greater than 0.4 ha (1 ac) of new surface impacts. Additionally, to minimize surface disturbance to the surrounding habitat, the authorized biologist shall conspicuously stake, flag, or mark all work area boundaries.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor during site inspections, and document inspection findings in annual report.	Inspect the site to assure that no new impacts in excess of one acre occur outside of approved work area boundaries.	Completion of development of ancillary facilities and features.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-35	All vehicles using the entry road shall not exceed a speed of 30 mph. Project-related vehicles or equipment operating on the mine's ancillary/non-haul roads shall not exceed a speed limit of 25 mph. The permittee shall be responsible for enforcing this speed requirement on its employees, contractors, and agents. Additionally, cross-country or off-road travel shall not be permitted at any time, except under life threatening/emergency situations.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually . Report any observed violations in annual report.	Verify that speed limits are posted, that project vehicles appear to be in compliance, and that no off-road travel is observed.	Completion of mine reclamation earthmoving activities.
B-36	Employees shall inspect beneath parked vehicles and equipment prior to traveling. If a desert tortoise is encountered, no action shall be taken until either the animal has safely and voluntarily moved away from the parked vehicle or the authorized biologist has relocated the tortoise out of potential danger.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually. Report any observed violations in annual report.	Verify that employees inspect under vehicles prior to moving them.	Completion of mine reclamation earthmoving activities.
B-37	Desert tortoise notification and speed limit signs shall be posted and maintained within the project's boundaries. Employee parking areas shall have conspicuous signs alerting personnel to the presence of tortoises. Speed limits shall be posted within the mine site and along all regularly traveled ancillary/non-haul roads.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually. Report any observed violations in annual report.	Verify that required signs are present.	Completion of mine reclamation earthmoving activities.
B-38	The Service and BLM shall pre-approve the type(s) of chemical dust suppressant(s) used on haul/maintenance/access roads prior to their application.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Prior to approval of the mine operations plan, and when any change in suppressant is proposed by Mine.	Any change in dust suppressant chemicals must be approved in writing by FWS and BLM prior to use.	Completion of mine reclamation earthmoving activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-39	All trash and food items shall be promptly stored in raven and coyote proof containers and regularly conveyed from the mine site. Project structures/ design shall minimize the potential for raven nest or perch sites and no mining features (e.g., other buildings, power/water line enhancements, etc.), beyond the scope of the currently proposed action, shall be approved or authorized.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually. Report any observed violations in annual report.	Monitor for discarded trash and food items not put in required containers. Monitor for potential raven nest and perch sites.	Completion of mine reclamation activities.
B-40	No pets shall be permitted at the project site, process area or ancillary facilities, at any time. Furthermore, firearms shall be strictly prohibited, except for security personnel.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually. Report any observed violations in annual report.	Monitor for the presence of pets and firearms.	Completion of mine reclamation activities.
B-41	Road kill found along the mine's primary access way shall be promptly removed/buried to reduce the attraction of ravens and other potential tortoise predators to the area. Additionally, no feeding of coyotes, kit foxes, or ravens shall be allowed.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually. Report any observed violations in annual report.	Monitor for presence of road kill, and/or feeding of coyotes, foxes, or ravens.	Completion of mine reclamation activities.
B-42	Upon completion of the Mesquite Mine Project, all mine-related materials and vehicles/equipment shall be promptly removed from the site. Machinery and personnel involved with the mine's subsequent reclamation shall only be permitted in the project area during the course of reclamation efforts. Once reclamation measures have been implemented, no associated equipment and supplies shall be allowed to remain on-site.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually following Mine closure.	Monitor for presence of mine-related materials, vehicles and equipment.	Completion of mine reclamation activities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-43	In addition to the measures proposed, the California Department of Fish and Game requires that a management rate of $200/acre and a $95/acre enhancement fee, be provided to the Department for management of acquired tortoise lands. The acreage subject to the fee shall be determined as part of the 2080.1 consistency determination.	Provisions of State Endangered Species Act (ESA)	California Dept. of Fish and Game	Verify payment of fees prior to project initiation.	Review acreage of lands set aside for tortoise mitigation and review payment to determine if it is consistent with 2080.1 determination.	Prior to initiation of expansion project.
B-44	Tortoise exclusion fencing or chain link fencing shall be installed around the entire area undergoing mining activities, except in areas where existing chain link fencing has been modified with a berm at the base of the fence as described in Opinion 1-6-92-F-22. Currently, the area to the north of the mine site does not have tortoise exclusion fencing or modified chain link fencing. This area shall be fenced to prevent the continued ingress of desert tortoises to areas where they may be harmed.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Inspect, and re-view the fence repair log and report annually.	Inspect the fence for continued integrity. Note any fence-related occurrences that might result in impacts to desert tortoise.	Completion of mine reclamation earthmoving activities.
B-45	Inactive burrows that will not undergo damage or destruction from mine expansion shall be flagged and avoided. Following completion of the individual support facilities, all materials utilized to mark or identify the tortoise burrows shall be promptly removed.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Prior to initiation of mine expansion.	Check that flags are placed at all inactive desert tortoise burrows that will not be damaged in the proposed mine expansion; remove flags after mine ancillary facilities are completed.	Completion of mine expansion ancillary facilities.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-46	Compensation for disturbance to desert tortoise habitat is identified as part of the proposed action. This term and condition refines the proposal to acquire desert tortoise habitat as compensation for losses to desert tortoise habitat. Lands acquired by BLM to offset impacts associated with the proposed project shall be secured and deeded to the BLM prior to phased disturbance associated with the expansion.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	At least 30 days prior to any surface disturbance associated with the proposed Mine expansion, Newmont must notify BLM in writing.	Determine if the acreage and habitat type of lands proposed for transfer meet the listed requirements.	Transfer of 697-800 acres or more acres of compensation lands from Newmont to BLM (see below for details).
B-47	BLM shall receive 50% of the necessary compensation acreage (800 acres), or funds sufficient to acquire such acreage within 6 months of expansion notification and prior to surface disturbance associated with the expansion. At least 50% of the microphyll woodland compensation lands (123 acres) (or appropriate funds to allow BLM acquisition of lands), or lands comprising a 3:1 ratio to the microphyll woodland that will be disturbed in the first phase, whichever is greater, must be received by BLM as part of this first installment of compensation land. Subsequent land acquisition to compensate for the loss of desert tortoise habitat associated with expansion must occur prior to surface disturbance associated with each expansion phase. If the final action taken on the proposed expansion is the reduced footprint alternative, the required compensation acreage will change accordingly. The reduced footprint alternative would result in surface disturbance to 268 acres of Category II habitat and 188 acres of Category III habitat, including 81 acres of microphyll	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Following transfer of the required compensation lands.	Determine if the acreage and habitat type of lands proposed for transfer meet the listed requirements.	Transfer of 800 acres or more compensation lands from Newmont to BLM, including 123 acres of microphyll woodland habitat, if the proposed project mine expansion is implemented.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-47 (cont'd.)	(CONTINUED FROM PREVIOUS PAGE) woodland. BLM must receive 50% of the necessary compensation acreage (697 acres), or funds sufficient to acquire such acreage, within six months of expansion notification and prior to disturbance associated with expansion. At least 50% of the microphyll woodland compensation lands (121 acres) (or appropriate funds to allow BLM acquisition of lands), or lands comprising a 3:1 ratio to the microphyll woodland that will be disturbed in the first phase, whichever is greater, must be received by BLM as part of this first installment of compensation land. Subsequent land acquisition to compensate for the loss of desert tortoise habitat associated with expansion must occur prior to surface disturbance associated with each expansion phase. Appropriate funds to allow BLM acquisition of compensation lands may be transferred in lieu of land.					
B-48	Compensation lands shall be identified on BLM maps available to El Centro Field Office staff, and protected in perpetuity for the benefit of the desert tortoise. Appropriated lands shall not be exchanged, sold, or otherwise disposed of. BLM shall retain land acquired as compensation for the purpose of desert tortoise conservation.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Within two weeks of land transfer, the locations of the transferred lands shall be marked on appropriate BLM maps.	Locations of the transferred lands shall be marked as lands that are for the sole purpose of desert tortoise conservation, and shall not be exchanged, sold, or otherwise disposed.	Identification of desert tortoise mitigation lands from Newmont to BLM.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-49	The BLM shall develop, and the Service approve, a raven monitoring plan that can be implemented to detect changes in raven abundance associated with mining activities.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Review results of raven monitoring in the required report each July.	Review annual raven monitoring report for compliance with required mitigation measures, and for indications that raven numbers may be increasing.	Completion of mine reclamation earthmoving activities.
B-50	The mine site restoration effort shall be directed towards the re-establishment of desert tortoise habitat and conducted under a Desert Tortoise Habitat Restoration Plan that is approved by the BLM and the Service.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor following mine closure and report annually.	Report on progress toward re-establishment of desert tortoise habitat, and compliance with the Desert Tortoise Habitat Restoration Plan.	Completion of mine reclamation activities, as demonstrated by reclaimed areas that meet or exceed Reclamation Plan success criteria.
B-51	Pits shall either be backfilled and slope steepness reduced to a grade negotiable for tortoise, or tortoise barrier fencing or modified chain link fencing shall be installed around the perimeter of all pits after mining is complete. BLM shall assure that fences installed are maintained in perpetuity. Backfilling or fencing is necessary to minimize ongoing incidental take that could otherwise occur if tortoises fall into steep-sided pits left open after mining. BLM shall take the lead in negotiating implementation of this mitigation measure with all affected organizations and agencies.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor annually following mine closure, report annually.	Report on compliance in meeting the listed requirements.	When released from this requirement by U.S. BLM, U.S. FWS, and CDFG.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-52	Success criteria for future Wash/Microphyll Woodland, Upland Succulent, and Creosote Scrub, areas shall include density, cover, and species composition criteria, that reflect conditions suitable for desert tortoise habituation and typical of the general area.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Prior to approval of the proposed Mine Reclamation Plan.	Review proposed success criteria to determine if they reflect conditions suitable for desert tortoise.	BLM approval of Mine Reclamation Plan for proposed expansion.
B-53	As part of the Desert Tortoise Habitat Restoration Plan, revegetated areas shall be monitored under an approved monitoring plan, and maintained clear of weeds until success criteria are met. The monitoring and revegetation requirements shall remain in place including all contingency measures to insure eventual success, until the success criteria are achieved.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor following mine closure, and subsequently monitor and report annually.	Monitor and report on progress in meeting Reclamation Plan success criteria and consistency with the Desert Tortoise Habitat Restoration Plan.	Completion of mine reclamation activities, as demonstrated by reclaimed areas that meet or exceed Reclamation Plan success criteria.
B-54	Disturbance to desert tortoise habitat within the mine site shall be minimized to the maximum extent possible by implementing all feasible means of using currently disturbed areas rather than expanding the footprints of OISAs, heap leach pads, and ancillary facilities. New OISAs, heap leach pads and ancillary facilities shall be kept within existing disturbed areas (as shown in EIR/EIS Figure 2.1-1) or within areas approved for facility expansion under this FEIR/EIS, such as the Big Chief West OISA, the Section 16 leach pad expansion area, and the East Rainbow North OISA.	BLM Record of Decision (ROD)	Newmont Mining and U.S. BLM/ El Centro Field Office	Monitor and report annually on the use of currently disturbed areas.	Identify acreage of any mine expansion facilities that use unpermitted, undisturbed land.	Closure of mine.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-55*	Avoid chuckwalla habitat whenever possible.	BLM Record of Decision (ROD) / CUP	U.S. BLM/ El Centro Field Office/ Imperial Co.	Monitor prior to expansion, and during annual inspection, report annually.	Review chuckwalla habitat map prior to expansion, compare it with the expansion plans.	Completion of mine expansion.
B-56*	Ensure that chuckwalla habitat that is avoided shall have a corridor of undisturbed land connecting to habitat off-site.	BLM Record of Decision (ROD) / CUP	U.S. BLM/ El Centro Field Office/ Imperial Co.	Monitor prior to expansion, and during annual inspection, report annually.	Ensure that avoidance, connection areas are mapped prior to expansion.	Completion of mine expansion.
B-57*	A mule deer fence, whose design is approved by the game branch of CDFG, shall be installed along the entire perimeter of the mine property. Fences shall be routinely checked for breaks.	BLM Record of Decision (ROD)/CUP	U.S. BLM/ El Centro Field Office/ Imperial Co.	Monitor prior to expansion, and during annual inspection, report annually.	Inspect to ensure that the required fence is installed, and has no breaks.	Completion of mine reclamation activities.
B-58*	Attractive process water shall be fenced, contained, or otherwise made unavailable to mule deer. These deterrents shall be routinely checked to assure mule deer cannot access these water sources. Death of a mule deer shall be reported to CDFG within one week of occurrence.	BLM Record of Decision (ROD)	U.S. BLM/ El Centro Field Office	Monitor prior to expansion, and during annual inspection, report annually.	Inspect to ensure that the required deterrents are installed and maintained.	Completion of mine reclamation activities.
B-59*	Microcatchments shall be installed in the reclaimed areas to provide areas of moisture enhancement and to aid in seed germination.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Following completion of mining operations, then monitor during site inspections, and report annually.	Inspect site to determine that all applicable areas identified in the Reclamation Plan now have microcatchments there.	Completion of microcatchment work on all areas identified in the Reclamation Plan.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-60*	Seeds shall only be collected from plants on and in proximity to the Mesquite Mine property to enhance the potential for successful revegetation. These seeds shall be used in future reseeding of reclaimed areas as well as in any nursery programs conducted on-site for later transplant.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Monitor and report annually.	Review annual reclamation activities report.	Completion of mine reclamation activities.
B-61*	MatureFairy duster plants within the proposed expansion areas shall be salvaged and transplanted into reclaimed areas.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Monitor and report annually.	Review annual reclamation activities report, inspect transplantation sites.	Completion of mine expansion.
B-62*	Cuttings or seeds from local Fairy duster plants shall be utilized to augment population numbers.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Monitor and report annually.	Review annual reclamation activities report, inspect transplantation sites.	Completion of mine reclamation activities.
B-63*	Any Fairy duster plants that are lost as a result of the Mine expansion shall be mitigated on a 1:1 basis, either through planting of new plants in appropriate areas as described above (B-62), or through preservation of Fairy duster plants located within the planned compensation lands.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Monitor and report annually.	Review annual reclamation activities report, inspect planting sites.	Completion of mine expansion.
B-64*, B-66*, B-68*	Microcatchments shall be installed in any areas that will benefit from moisture enhancement and continued input of wind-dispersed seed.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Following completion of mining operations, then monitor during site inspections, and report annually.	Inspect site to determine that all applicable areas identified in the Reclamation Plan now have micro-catchments there.	Completion of microcatchment work on all areas identified in the Reclamation Plan.

I.D. No.	Mitigation Measure	Condition of Permit	Monitoring Agency	Monitoring/ Reporting Schedule	Monitoring Specifics	Completion Requirement
B-65*, B-67*, B-69*	Disturbed areas along roads and facility areas shall be scarified to provide more conducive surfaces and substrate conditions for natural plant establishment.	Reclamation Plan	Imperial Co. Planning & Building Dept./ U.S. BLM, El Centro Field Office	Following completion of mining operations, then monitor during site inspections, report yearly.	Inspect site to determine that all areas of compacted soil have been scarified.	Completion of scarification work on all areas identified in the Reclamation Plan.